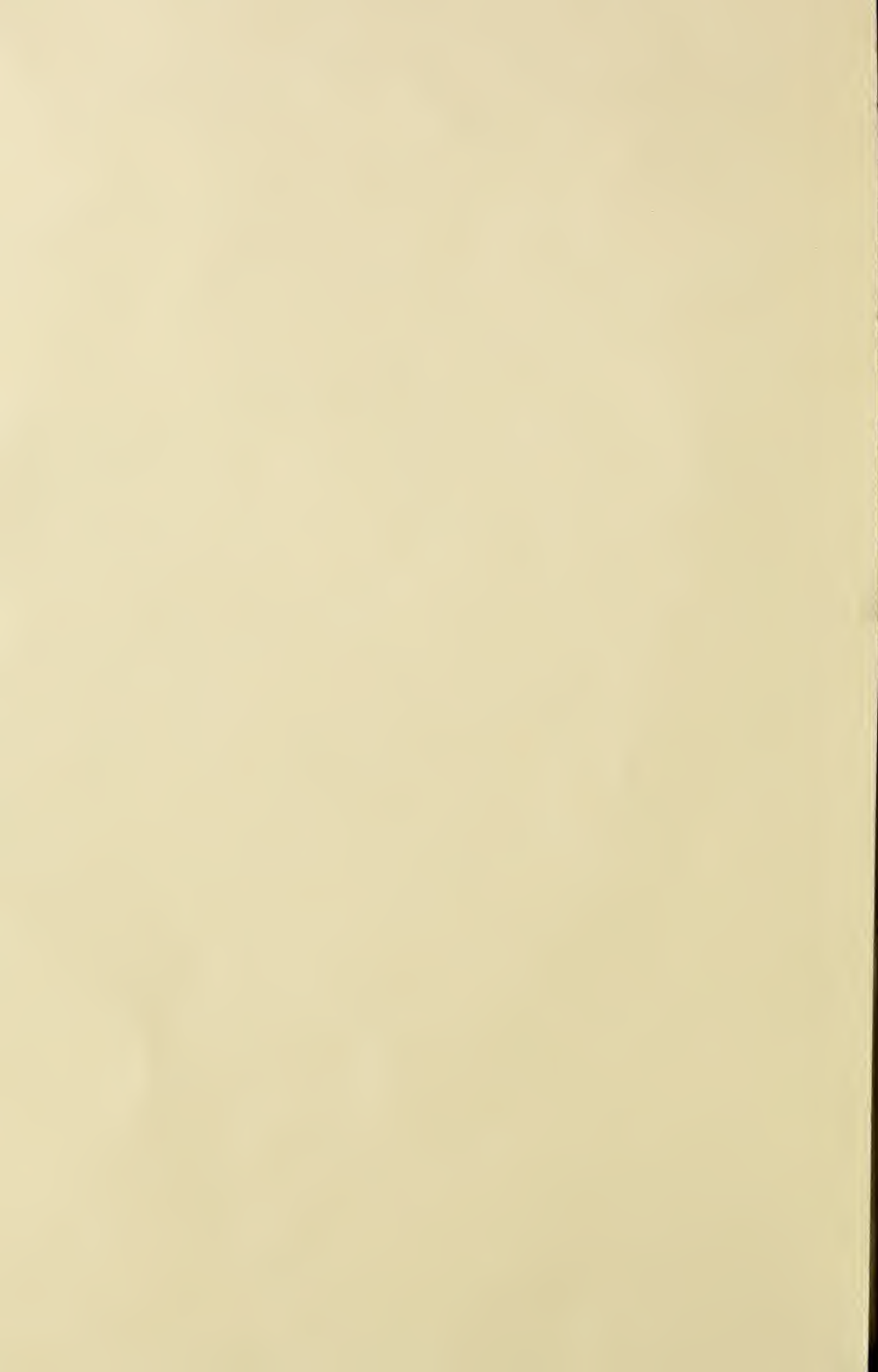


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MARYLAND FARMER AND MECHANIC:

DEVOTED TO


Agriculture, Horticulture, Rural Economy & Mechanic Arts.

Vol. 1. BALTIMORE, FEBRUARY 1, 1864. No. 2.

ACKNOWLEDGMENT.

We take this occasion to return our sincere thanks to our many friends for the prompt manner in which they have responded to our wishes in forwarding their own names and in various instances making up a list from among their neighbours, 'as subscribers to "THE FARMER AND MECHANIC." The fine spirit in which our call has been met and the welcome which has been accorded to the first number of this our new enterprise, emboldens us to believe that it will prove even more acceptable in future when all our arrangements are perfected and we are fully under way, with our periodical thoroughly systematized and in complete order. We trust then that those who believe that we are serving a good purpose, and that our aim—as it surely is—contemplates nothing less than to promote, to the best of our ability, the interests of the Farmer, the Planter, and the Stock raiser, will not weary in their well doing. A good word, a personal application to subscribe, a generous commendation, if our labours deserve it—these are the sustaining influences we ask at their hands. We know that self praise carries with it the odor of vanity and self-seeking, and whilst we mainly depend upon its merits for the success of our paper, it is not for us, but our friends and well wishers to make those merits known. This is all we ask; can they do less?

To the Newspaper Press we return our hearty acknowledgments for the very handsome manner in which they have spoken of our initial number.

 GET UP CLUBS OF FIVE.—There is no neighbourhood in which a club for the "FARMER" cannot be raised—and if only *five subscribers* are obtained, a sixth copy will be received by the person getting up the club. Surely every head of a family should feel some interest in having such a work as the FARMER read by their household. Not a line will be found in its pages, but will be calculated to interest and instruct every member, from the oldest to the youngest.

ELEMENTS OF LANDSCAPE GARDENING.

Number Two.

Laying out the Grounds of a Country Place.

The first thing to be done in laying out of new grounds, is to make a thorough examination of the capabilities of the place to be thus ornamented. It is assumed, of course, that the dwelling-house has already been built, and it must be borne in mind that all the planting to be done must be subordinated to that central point. If there is a fine view from the house, the grouping of trees and shrubs should be of a character to constitute the best possible foreground to that view. If the view should be an extensive one, it will be proper to so plant up the foreground as to break up the distant landscapes into a succession of pictures, instead of throwing the whole open to the eye at once. This may be very readily accomplished by planting masses of trees in such positions as to shut out portions of the view, leaving it to be seen only in detached parts and through vistas, the enclosing trees forming, as it were, the frames work of the separate pictures thus presented. In preparing these effects, care should be taken that such portions of the distant view as present the most beautiful features should be thrown open, whilst the less attractive elements should be shut out. All unsightly objects should, of course, be rigidly excluded. And here we may remark, that in the matter of planting out, where the place is new and the object is to produce the desired result at once, the excluding groups should be planted as near to the house as possible, as, in this manner, the trees, though young, will be found effective for this purpose at once, whereas, if they were planted at a remoter distance, the eye would range over and beyond them, and the purpose they were intended to serve would not be attained until after they had attained many years of growth—we should always advise in cases of this kind an abundant use of Evergreens, they are dense in their foliage; many of them—such as the pines, the Norway spruce and the bal-

sam fir—are of quick growth, and in the winter season they give a summer aspect to the place when the leaves of the deciduous trees have all fallen. Preliminary to all this, however, the walks and drives, or what constitutes the main approach to the house should be carefully marked out. No planting can be accomplished until this is done and done satisfactorily. The approach to the house requires careful study.—It should wind more or less, taking advantage for this purpose of the inequalities of the ground, but it should not be unnecessarily tortuous. It should appear, in fact, to be the nearest and most direct way to the house, and if diverted from its course, an apparent reason should be shown for it. At the entrance gateway trees should be massed on either side and along the line of the road other trees should be interspersed here singly, and there in groups—here a stray moss to close out the view entirely, and here and there a bold opening through which glimpses of the dwelling may be had, or picturesque bits of the landscape beyond. In the rear of the house itself, the trees should be massed heavily, not only for protection against the north-west winds and as a cover to the offices and the stabling beyond, but because it is to this great central mass all the other masses are to be subordinated. Bearing these leading ideas in mind, the next best thing to do after laying off the drive and such walks as may be thought necessary, is to go over the whole grounds again and with stakes pointed and prepared for the purpose, indicate every place where a tree is to be planted and groups are to be formed. When this is accomplished, go over the whole work half a dozen times. Survey the stakes from the approach drive from the walks and from the windows of the house, and wherever they intercept the view, or fail of their purpose, or live too much with each other, change them until from whatever point they are viewed, they are found to fulfill the object for which they were set down.—Every group should thus be distinctly marked, not with one stake alone, but with as many as there are trees to be planted, and the connection between the groups and masses should be well kept up by single trees interspersed at irregular intervals between.

HEATING VALUE OF DIFFERENT WOODS.—The following is set down by competent judges as the relative heating value of the various kinds of American woods used for heating purposes or producing steam: Shellbark hickory, being taken as the highest standard, 100; pignut hickory 95; white oak 75; white hazel 72; apple tree 70; red oak 69; black walnut 66; white beech 65; black birch 62; yellow oak 60; hard maple 59; white elm 58; red cedar 56; wild cherry 55; yellow poplar 52; butternut 52; white birch 49; white pine 42.

HINTS ON COUNTRY HOUSES.

Number Two.

Suburban Residences and their Surroundings.

Strictly speaking what is called a suburban residence is a dwelling adjacent, or nearly adjacent, to the outer boundaries of a city. We however, in this paper, propose to extend the distance, and include in the term "suburban," all those villas and cottages in the neighbourhood of a large city, and within a radius of five miles. All of these are seated within their own grounds, and all are capable of that adornment, by a person of taste, which trees, and shrubs, and flowers, and climbing plants, when judiciously arranged never yet failed to afford. The passion for the country is a natural feeling, inbred and growing stronger as we advance in years. It is the longing for rest and quietude, for the blue sky and green fields and running waters. It is the weariness of the clangour and the turmoil of town—with its incessant cares, its hollow friendships, its moralities and its immoralities. It is a stirring within us of the instincts we derive from our first parents—"the gardener Adam and his wife," as Tennyson styles them. Now, we are by no means certain, nevertheless, that those who transfer their residence from the city to the country in the expectation of remaining permanently where they can play at haymaking if they think proper—will be satisfied after they get there. The change from town to country is very great. Fixed habits have been formed that are difficult to eradicate. A business man with nothing to do and with but little knowledge of books will find himself terribly at loss for want of employment in the country. How much the other members of the family may take upon themselves to mope and pine from the same cause, we will not undertake to say. Of course when this reaction has set in, disgust of the country speedily follows. The situation is damp, the house is cold and uncomfortable in winter and hot and uncomfortable in summer. The fancy dairy does not keep the milk well. The pigeons—the boys pets, and therefore not to be disturbed, cannot be kept out of the garden. Consequently, although there was a fine promise of peas, the gardener complains there is but here and there a straggling vine—matters do not work well in any department. Even the house servants are mutinous—they yearn for the city and their back door gossips and cronies, and often without forewarning, to the city they go. So my gentleman from the city, who, though the would love to sit under his own vine and fig tree and hear the birds sing, and watch the rising and the setting of the sun—he never attempts the former more than once—this gentleman, whose head for thirty years had been full of bales of blankets and cartoons of

ribbons, or of hogsheads of sugar and boxes of soap, suddenly discovers that the country is not all his fancy painted it, and that the fine house which he had taken so much pains to instruct his architect how to design, and which he had himself subsequently altered to suit his own peculiar taste—putting here a Norman door, and there a Gothic window, and throwing in a little touch of the Grecian, in the way of pillars and architraves—is too fine to live in, and sorrowfully comes to the conclusion, that a house in a brick block with a pressed brick or a brown stone front is better adapted to his wants, and that he would willingly exchange the singing of birds for the stony rattle of drays and carriages. The upshot of all this is that he sells his villa residence at an enormous sacrifice and goes back to town. His successor, if he be of the same habits and the same mental calibre, amuses himself with making what he calls improvements to the place: puts a couple of bronze crows with their wings outstretched on the stone piers of the entrance way, under the impression that they resemble the American eagle, moves earth from where it is wanted to some point where it is not wanted at all—a very expensive business; makes a sort of railway embankment or causeway across the hollow that intervenes between the entrance approach and the house, and after putting up stables whose magnitude and prominence, and ornamentation so overpower the house itself as to render it in appearance comparatively insignificant, he finds his toy rather a costly one, and suddenly exchanges it for a dwelling in the city paying or receiving a difference, as the case may be. We have given this picture merely as a sample of many who seek the country for a season and appear to be enraptured with it so long as every thing is novel, and the friends who find it a convenient distance, and are delighted with the little paradise, do not press their courtesies too often. But the true lover of the country is of a different stamp altogether, and although he may sometimes have the good fortune to reap some advantage from the follies of his predecessors; he is himself usually the best improver of his domain, and he moves not as if he had the wealth of Croesus at his command, but slowly and surely; making no mistakes and thinking out carefully his plans before he acts upon them.

SULPHUR FOR POTATOES.—A correspondent of the London Gardener's Chronicle dusted his potato sets with sulphur, and found that it not only drove away slugs, worms and insects, but that the crop was entirely free from disease.

The manufacture of syrup from sorghum has become an established business in the West, and great improvements have been made in the apparatus for evaporating the juice of the plant.

Our Agricultural Calendar.

Farm Work for February.

It is always difficult to state, with any degree of precision, what amount of Farm work can be done in the open air during the month of February in this latitude. There are seasons when the weather is so open and the frost so completely out of the ground, that the ploughs can be kept running in all but the heaviest soils for two weeks or more. At other times the warm interval is so transitory as to be of no practical service in preparing the ground for the earlier crops. February is, in fact, a month of expectation, usually, rather than one of busy action. Yet there is much to do, nevertheless, although the labor is mostly of a desultory and diversified character. Everything has to be got ready for work as soon as the proper season for work arrives. The stock have to be kept in good condition, with better food and closer attendance during this and the succeeding month, inasmuch as they are to these animals, housed throughout the winter and fed for the most part, on dry fodder, the most trying months of all the year. The work horses must now be fed more generously to enable them to withstand, without danger of breaking down, the severe labour before them. The wagons, carts, hoes, rakes, shovels, harness, gear, ploughs, and, indeed, every kind of farm implement and farm adjunct should be examined thoroughly, and put in the best condition. If the tools are of an inferior kind, or much worn, it is economy to throw them away and purchase other and better. No man can do a good days work with bad tools, and every implement that expedites labour is of a value which we rarely appreciate to its full extent. In respect to farm boundaries there are, probably, fences to be put in order, new gates to be made, and new posts wanted to replace those that are old and decayed. For the house there is wood to be shedded and stored away, and a sufficiency cut into lengths ready for use during the busy season, when the withdrawal of a single hand might endanger the loss of the best season for seeding.—From the barn-yard there is manure to haul out, upon the ground intended for corn, and in the yard itself there are composts which may be made if the amount of manure on hand should prove to be insufficient. If, however, the season should happen to prove an open one, the following will claim attention:

WINTER PLOUGHING.

Seize the first opportunity that the ground is in proper order to set the ploughs running. In light lands this is an easy matter, for in the absence of frost such soils dry very quickly. In heavy clays,

and clay loams, however, the case is different, and the question as to the proper time for ploughing them in the early Spring requires the exercise of a good deal of judgment. If they are too wet they will bake; if they are too dry they will clod. The true mean then is to plough when the soil, though yet moist, is loose and friable, and the furrow slice crumbles behind the movement of the plough.

PREPARING FOR OATS.

In the Middle States it is impossible to get oats into the ground too early, provided that all danger of heavy frosts is over for the season. A slight frost will not seriously affect the growth of the oat, and the earlier the seeding is done the greater chance there is of obtaining returns at harvest time, commensurate with the quality and condition of the land. If a heavy soil, and such is the best for oats, we should plough deeply. If a light one, we should plough shallow for the purpose of preserving as much as possible a compact soil for the roots to work in.—Loams and clay loams, moist old pastures, and soils newly brought under cultivation, these are the most fitting for the growth of oats. They will not do well on dry, gravelly, and light sandy soils, for the latter neither retain throughout the season the requisite coolness and moisture, nor do they usually abound in those constituents whose presence in the soil is necessary to the perfect growth of the oat.

The following analysis of the straw and grain of the oat, indicates very clearly what substances it requires in the soil to promote the vigor of its growth:

	SEED. (Boussingault.)	STRAW. (Levl.)
Potash, - - -	12.09.	12.18.
Soda, - - -	-	14.69.
Lime, - - -	3.07.	7.29.
Magnesia, - - -	7.07.	4.58.
Phosphoric Acid, - - -	14.09.	1.94.
Chlorine, - - -	6.80.	—
Sulphuric Acid, - - -	6.20.	—

Now, if we assume that a soil requires assistance—and there are few that do not that have been worked for some years in our generally slovenly fashion—either of the following mixtures will suffice for an acre:

No. 1.—15 two horse cart loads of compost formed of one-third barn-yard manure, and two-thirds swamp muck, intermixed with 5 bushels of ashes, 1 bushel of plaster, and 2 bushels of refuse salt.

No. 2.—8 bushels of bone dust, 10 bushels of ashes, 1 bushel of plaster and 2 bushels of salt—mix and leave standing for a few days before spreading.

No. 3.—2 cwt. manipulated guano, 10 bushels of ashes, 1 bushel of plaster, and 2 bushels of salt.

No. 4.—10 two horse cart loads of barn-yard manure, 5 bushels of ground bones, and 10 bushels of ashes.

SOWING CLOVER SEED.

Sow clover seed in February, if possible, so that it may obtain an early set. It is a good plan where

pasture is needed to sow orchard grass with the clover—say twelve pounds of clover seed to two bushels of orchard grass. One bushel of the latter will suffice; but we have always found in such cases, that the orchard grass grew too much in bunches—whilst liberal seeding also prevents the orchard grass from growing coarse.

PLASTERING CLOVER FIELDS.

Such fields as are already in clover should be plastered at the rate of one bushel of plaster to the acre.

POULTRY HOUSES.

See that these are cleansed and fumigated.

TOBACCO BEDS.

Prepare these in due time, and have them in the best possible condition for the reception of the seed.

NEW ORCHARDS.

Set out, if you require it, a young orchard of fruit trees as early as the season will permit.

Garden Work for February.

There is no mode of obtaining early vegetables except by means of hot beds for starting and forwarding the young plants. Hot beds are simple of construction, and can be managed by any person possessing even an ordinary share of judgment.—The only cost is that of the sash, and these can be now obtained at the sash factories for so trifling a sum that there can be no excuse for being without, at least, a single frame of these sash. The frame can be made on the place. The sash then, glazed and painted, is all that it is absolutely necessary should be purchased, and so useful is this simplest of hot houses; so completely does it enable us to anticipate the usual period for the appearance of vegetables in our markets and on our tables, and so pleasant is the consciousness of having a good supply of plants for early table use, that we can only marvel at the carelessness of those who neglect their opportunities, and working as their father's did by "the rule of thumb," are content to drag along through the greater part of the summer before they have a vegetable fit to put upon the table. We say nothing of the healthfulness of having radishes and lettuce and cress and small salading early in the Spring, or of having tomatoes ready for market a month earlier than they can be obtained in the open gardens. This, however, we think we can say with certainty—no intelligent and industrious farmer—and intelligence and industry usually go together—ever regretted the first cost of a hot bed frame and its sashes, nor would he even willingly omit the use of it, we think, at the proper season.

SOWING SEEDS IN HOT BEDS.

About the middle of the month sow cabbage seed of the early and late sorts—either broadcast or in drills. These may occupy one-fourth of the bed.

The remaining three-fourths may be seeded with tomatoes, egg plants, pepper, lettuce, celery and radishes.

OPEN AIR CULTURE.

Spinach.—As soon as the frost has disappeared prepare a bed for early spinach. The ground should be heavily manured, deeply stirred, and pulverized very fine. Draw the drills a foot apart and one inch deep; sow the seed and press the earth lightly over them.

Carrots, Parsnips, and Beets.—The month of February is rather early for sowing the seed of these excellent roots; but if the season will admit of it, manure heavily, spade the ground very deeply and drill in a few rows of each sort for early use.

Peas.—The Pea is one of the first vegetables that may be seeded in the open ground. It is perfectly hardy, will stand a heavy frost without injury and it gives the heaviest crops where it matures before the warm weather sets in. Plant therefore a few rows of early peas the first convenient opportunity, and for a continuous supply repeat the seeding every two weeks.

Grape Vines—Raspberries.—Grape vines should be carefully trimmed during this month, as at a later period they would be seriously injured by the loss of sap. Dig round their roots and treat them to a dressing of bone dust, wood ashes and lime. Trim all raspberry bushes. Tie them neatly to stakes and fork in a good supply of well rotted manure.

Pruning Gooseberries, Currants, &c.—These fruits should now be carefully pruned, trimming up each bush—where the plants are young—to a single stem, and forming of its branches an open head to resemble a miniature tree. Cuttings, taken from shoots of the preceding summer, may now be set out. Each cutting should be a foot in length, and all the buds, except the few topmost ones, which are to form the future head, should be rubbed off before planting.

LINSEED MEALS FOR CALVES.—The *Irish Farmer's Gazette* gives the following directions for feeding-oil-cake to calves: "Linseed meal is highly nutritious, and a useful auxiliary in feeding calves;—each calf may get from one-half to one pound per day, according to size and age. The best way to prepare it is—steep a quarter of a pound for each feed in cold water, for 12 hours, then either dilute it with warm water, till of the temperature of new milk, making a gruel equal in bulk to the quantity of milk usually given, or boil it for twenty minutes, and let it stand till luke-warm; in the beginning but small quantities should be given, mixed with the milk, and by degrees increase it and decrease the milk, till the end of a month or six weeks, they may be fed alone on the linseed and may be allowed some grass and finely cut roots.

MANAGEMENT OF TOBACCO.

BY MR. BAKER, OF VIRGINIA.

"I am raising a kind of tobacco called Oronoco, which is to be preferred for manufacturing purposes, but is not admired by shippers. I would, therefore, advise you to cultivate the Green Frederick, or some other kind for shipping. It is important in the tobacco crop, in order to raise it of superior quality, that it be planted as early in the season as possible. To accomplish this, you should select your best land for the plants, burn it well, prepare and sow your seed as soon as practicable, say by the last of February, at all events. I deem it unnecessary to say anything to you about preparing your soil, presuming you understand that part of the business as well as I do. Commence planting as soon as your plants are of sufficient size and finish by the 10th of June, if you can. As your soil in Missouri is richer and more productive than ours in Virginia, I have no doubt your tobacco will bear *topping* higher than we generally top ours. I have topped mine for the last four years to eight leaves, and have made more and the quality is better than when I topped it higher. I have no doubt yours will bear topping to ten or twelve leaves. Be sure you top it high enough to prevent the top leaves from *whetting* against the ground; because the value of tobacco is often very much impaired in that way. You should be as particular in guarding against the other extreme, that of topping too high, by which you will injure your tobacco in several respects, as by making it thin and poor and the leaves very narrow. You should see that it is not disfigured by the *horn worm*, if you have any, and that your negroes do not break the leaves when pulling off the suckers. In fact, great care should be used when handling your tobacco through the whole course of management, from the time you commence topping until it is ready for market, that they do not break nor bruise it while it is green, nor crumble it when dry, after it is cured, nor deface it in any way whatever. You should not cut your tobacco until it is well matured, unless you are forced to do so from its *firing*, or a danger of its being bit by frost. When you cut it, great care should be used to prevent it from sun-burning. Do not let it remain on the ground until it becomes limber, but have it carefully taken up and secured as soon as it will bear handling; or in other words, as soon as it has commenced falling. In every instance, move it to the houses as soon as possible after it is cut, in order to secure it in case of rain. If it is large, you should not hang more than from eight to ten plants on a stick, the space between the tiers in your tobacco house being four feet. A space of six inches between the sticks on the tiers in your tobacco house will be ne-

cessary while the tobacco is green. After it is cured, it may be stored closer. You should build your houses with round poles or frames planked up, or in any way to suit your convenience or fancy, so you have them tolerably tight. The bodies should be high enough to admit of not less than three clear tiers below the joists. You may have the roofs of slates, planks or shingles, just as you like; it is best to have them close, so they will not leak. The curing process should commence in some four or five days from the time your tobacco is cut, if the weather is hot, or as soon as it has partially faded. This is done by raising small fires on the floor of the house. You can have four rows of fires in a house of the size I have named, extending from one side to the other. Fire your tobacco from three to four hours every day (Sundays excepted) until the leaf is cured; after which time, it will only be necessary to fire it in damp weather or when you see mould on the stem near the stalk. You should bulk it down in tolerably soft order, so that you can strip it in any still weather during the winter. It should be carefully bulked with the tails lapped, not laying any stalks on the inside of the bulk. My reasons for wishing you to bulk it in this way, are that the leaf may not be damaged by any moisture the stalks might contain, and also to enable you to examine it successfully at all times, by pulling out from either side of the bulk. Strip your tobacco in damp weather, when it will not speedily dry from exposure. Tie from four to six leaves in a bundle, and see that the leaves are pretty nearly of the same length and quality in the same bundle. Bulk your tobacco every evening when stripping, in the same way that you do before it is stripped. Let it remain in the bulk until March or April, (unless it should be likely to injure before that time,) then hang it on the sticks and raise it in the house. Let it hang until the stems are perfectly dry. Then take it down the first *give*, as soon as the leaf has softened a little, before the stems have limbered at all. The stems should be dry enough to break short off from one end of the leaf to the other; then it is in shipping order, and if you chose, you can pack it in large double bulks and *weight* them. Before you commence prizing, it will be best for you to sort over all your good tobacco and arrange it for the hogsheads, so as to have the tobacco in each hoghead as near of the same length and quality as possible. Commence prizing about the middle of May, or any time thereafter when it may best suit your convenience, so as to put your tobacco in market by the middle of August. Its order, when dry enough to ensure its keeping, will vary according to the heat or cold of the atmosphere. Have your hogsheads fully up to the gauge; with rived or sawed staves, just as you like. Have them set up

smooth and nice, with planed plank headings.—Prize 1,500 lbs. in each hoghead; see that your tobacco is packed perfectly smooth and straight in the hogsheads.

"I will try to tell you something more about *curing*: You should have moderate fires in every instance, bearing in mind, that all people who fire tobacco are more inclined to have their fires too hot, than not hot enough. If you raise your fires too hot you will coddle the tobacco and make it worth but little; besides, there is a risk of your burning it. A yellow piebald is generally most admired by all merchants, though any color from a nutmeg up to a bright yellow will command a fair price, if the quality is good in other respects. You must not expect to cure it all of the same color. It is almost impossible to do that; nor should you consider it of little value because it cures of different colors. If it is uniformly good on the *hill*, so it will be in market, if you manage it well. You cannot make it good after it is cut; it must be good before, and then, by good management, you may keep it so.

FORESTS A NECESSITY OF FERTILITY.

The value of forests to a country in retaining moisture is well illustrated by the late severe freshets of the Connecticut valley. The snow melts quicker in an open country, and is retained longer among the groves. Formerly the Connecticut River and its tributaries were clothed with forests; now they are largely denuded, and we have reason to expect greater freshets than formerly. The present barrenness of Greece and Palestine, as contrasted with their former fertility, is similarly accounted for. Dr. Unger, a celebrated naturalist of Vienna, claims that the climate lacks its original moisture. He says that the hordes of warriors that have followed each other for centuries on that soil have burned up the forests, and every effort of nature to make restoration is subdued by a superabundance of goats.—The population live on the products of the goats, and the goats crop every twig, thus bringing barrenness. If the forests should ever again grow, Dr. Unger thinks that fertility would be restored.—*Scientific American*.

It is interesting to note that the school books lately published by the Austrian Government are printed on paper made of "corn shucks," or the leaves which protect the ear of maize. This material gives the page a yellowish color, which medical men hold to be less fatiguing to the eye than our snowy pages.

A Bale of cotton recently received by Wm. Pollock, of South Adams, Mass., contained a stick of yellow pine weighing 186 pounds, which at 90 cents per pound costs \$168.40.

BIRDS AND INSECTS.

France is swarming with and devoured by insects because she has gluttonly eaten up her small birds; which were her natural allies against destructive insects. Our neighbours have ruled that one bird on the spit is worth two in the bush, and the consequence is now a scarcity of birds and noxious superabundance of insect life, constituting a serious national evil. A report has been made on the subject, which contains some highly curious information. After specifying the enemies of trees, cereals, and plants, and the enormous damage done by them, the reporter makes these interesting reflections:—"However considerable these ravages are, it is surprising that they are not even greater when the prodigious fecundity of these evil species are considered; and if God in his wisdom had not provided a remedy, vegetation would have disappeared from the face of the earth. In fact, against such enemies man is powerless. His genius may enable him to follow the course of the planets, to penetrate mountains, or steer a ship against a storm; he can kill or bend to his will the monsters of the forests; but in presence of these myriads of insects which, from every point of the horizon, settle upon his fields, cultivated with so much care, his strength is sheer weakness. His eye is not sharp enough to discern many of them, his hand too slow to catch them—And even were he to annihilate them by millions, they would re-appear by milliards. From above, from below, from right to left, they come in legions innumerable, without relapse. In this invincible army which advances to the conquest of the labour of man, each member has its month, its day, its season, its tree, its plant: each knows its own battle ground, and never mistakes his post. At the beginning of the world man would have succumbed in this unequal struggle if God had not given him in the bird a powerful auxiliary, a faithful ally, who wonderfully accomplishes the task which man is incapable of performing." If this beautiful and benignant care of Providence to provide a guard against every injurious excess had been duly appreciated and trusted to by man, he would have been more circumspect in the work of destruction, and would have taken good heed not to wage war against creatures really his natural allies. And everywhere in the scheme of nature the balance of bane and antidote will be found, as Chaucer teaches us in these finely cadenced lines:

"For waldkie ground that beareth the weeds wick,
Beareth also these wholesome herbs as oft,
And next to the foul nettle rough and thick
The rose ywaxeth sweet and smooth and soft,
And next the valley is the hill aloft,
And next the darkie night the glad morrow,
And joy also is next the fine of sorrow."

Nature has done much to obtain for birds the forbearance at least, if not the tenderness and love of man. They are beautiful because they must be so much seen, just as, on the contrary, the reptiles, which from their habits are so much out of sight are ugly and repugnant. And besides their elegant forms and pretty or rich plumage, they give cheerful or sweet voice to the country. It should have been divined that creatures with such pleasing gifts to cause them to be spared and liked by man had offices to perform for his welfare. A large general humanity is indeed for the interests both unknown and known of mankind. But even in this country it was but lately that a systematic persecution of the rooks was commenced, and only happily stopped by the timely discovery, through Waterton, if we remember rightly, that the rook is the appointed enemy of the destructive wireworm. The farmer now knows, when he sees the rooks strutting and waddling about his fields as if they were their own, that they are his friends and allies, rendering good service for all they take from him, which may be considered as their wages for their duties in the rural constabulary force, against thievish worms and vermin. Owls have always been persecuted, and everything is, indeed, against them. As they are birds of night, nature has not given them any of the gaities she lavishes on other birds; but notwithstanding this the owl, properly considered, deserves the praise of the old madrigal:—

"Of all the brave birds that ever I see,
The owl is fairest in her degree."

The owl preys on field mice and other vermin and insects obnoxious to the farmer; but this usefully would have been extirpated long ago, had not its nocturnal habits happily withdrawn it from the eyes and opportunities of its stupid enemies. The raven is nearly extinct. They may be counted now, and the places specified rejoicing in their godly presence. He is a bird of prey, and we cannot precisely tell the good he does, but we have faith in his mission and admiration of his handsomeness and parts. He is a great thief when he gets among men, and makes acquaintance with all-corrupting gold and silver; but then he has all the virtues of a rogue, full of conversation and comical ways. In a state of nature, he is a solitary, serious bird, but domesticated, all familiarity and fun. Why he is represented as the prophet of evil we see not, and Ralph must have suggested the thought to Goldsmith's Good-natured Man, that croaker rhymes with joker. In other respects our bird establishments stand pretty well. Abroad the case is dismally different. The rook is about as scarce in France and Southern Germany as the raven is here, and you may travel miles and miles in a corn country without seeing a small bird of any kind. And mark the reason why.

We quote from the French report:—"Of suspected birds the one that enjoys the worst character is doubtless the sparrow, so often pointed out as an impudent pilferer." Now, if the facts mentioned in the petitions are exact, according to the opinion of many, this bird ought to stand much higher than he is reputed. In fact, it is stated that, a price having been set upon his head in Hungary and in Baden, this intelligent *proscrit* left those countries; but it was soon discovered that he alone could manfully contend against the cockroaches and the thousand winged insects of the lowlands, and the very men who offered a price for his destruction offered a still higher price to introduce him again into the country. It was a double expense—the ordinary punishment of hasty measures. Frederick the Great had also declared war against the sparrows, which did not respect his favorite fruit, the cherry. Naturally, the sparrows could not pretend to resist the conquerors of Austria, and they emigrated; but after two years not only were there no more cherries, but scarcely any other sort of fruit—the caterpillars ate them all up; and the great king, victor on so many fields of battle, was happy to sign peace at the cost of a few cherries with the reconciliated sparrows.—Moreover, M. Florent Prevost has shown that, according to circumstances, insects form at least one half—often in a much larger proportion—the food of the sparrow. It is exclusively with insects this bird feeds its brood. Behold a remarkable instance:—at Paris, where, nevertheless, the fragments of our own food provide abundant aliment for the sparrow, two of those birds having made their nest on a terrace of the Rue Vivienne, the *elytres* (upper wings) of the cockroaches thrown out of the nest were collected; they numbered 1400. Thus one little *menage* had destroyed 700 cockroaches to feed one single brood." The report then goes into detail of the vast mischief done by insects, and the services of birds, and birds alone, in checking it. Of the martin, which is shot out of sheer wantonness whenever a man with a gun can take a quick aim, we learn: "Ten of those birds were killed between the 15th of April and the 29th of August, at the close of day, as they were returning to their nests. The insects, of which the remains were found in their stomachs, amounted to no less than 5432, giving to each day for each bird an average of 543 insects destroyed.—Another statement gives analogous results to the hedge sparrow, and among the insects thus destroyed figure precisely our most formidable enemies—the weevil, the *pyrale*, the cockroach, and a host of others. You will easily understand, gentlemen, the mischief done by these insects if you call to mind that the cockroach deposits from 70 to 100 eggs at a time, which soon are transformed into white worms, which for two or three years live exclusively upon

the roots of our most valuable vegetables. The weevil produces from 70 to 90 eggs, which, laid in so many grains of corn, becomes larvæ that eat them all up. Thus, one single weevil destroys a whole ear of corn. The *pyrale* lays from 100 to 130 eggs in as many shoots of vine. Thus attacked, the shoot pines and dies. From 100 to 130 grapes are thus destroyed by one *pyrale* before their formation.—And now, if you will compare the two orders of figures which I have just submitted to you, admitting that on 500 insects destroyed in one day by a single bird there be only *one-tenth* of those noxious creatures; for example, 40 weevils and 10 *pyrales* (and this is below the mark)—that is to say, on an average, 3200 grains of corn, and 1150 grapes (*grappes de raisin*,) which in one day this little bird will have saved you. Give as large a margin as you choose to any other natural causes which might have stopped the ravages of these insects; reduce as much as you choose that of the bird, and there still remains enough to justify the profound saying of a contemporary:—"The bird can live without man; but man cannot live without the bird." Superior cookery has its evils as well as its economic epicurean and social advantages, and it is the misfortune of France that she has had the skill to make eatables of little birds whose murder Nature avenges by the devastation of whole crops by insects. But wanton destruction has to answer, perhaps, for still more mischief than gourmandism. The report laments that as soon as spring brings back the birds of passage every expedient is resorted to for their destruction. As to the little creatures, barely more than a tuft of feathers, a hundred of which make a small dish, the report remarks:—"If it was calculated, even at the lowest estimation, how many sacks of corn, barrels of wine and oil, are represented by a dish of these victims, it would be found that Lucullus in his full glory never gave so costly a repast; and to find an example of such luxury we should have to advert to Cleopatra's pearl. Moreover, this miserable excuse of satisfied sensuality cannot even be invoked by these *chasseurs*, who, by way of showing their skill, will fire at a swallow, perhaps carrying food to her young brood. To these men, cruel from thoughtlessness, we may be allowed to observe that, by destroying 500 insects during the day, that swallow had rendered a greater service to humanity than if ten *chasseurs* had returned home with full bags. Is it not, also, from sheer ignorance that the peasant nails against his barn door the owl, the fern owl, and other birds, by which his unhappy skill has deprived his fields and granaries of their natural protectors? Why does he not rather nail up his cat? And if it was not enough that man should carry on this war of extermination, behold the very children in youthful carelessness—that age without

pity,' as La Fontaine styles it—devoted to bird-nesting. Eggs or birds, all the same to them.—They break the first and torture the others to death.' The evil has gone so far as to make the remedy, if practicable, of very slow operation. The preservation of birds is now proposed in France as a national care and duty, but the stock is so low that the best preservation for years to come will not supply the deficiency, and meanwhile insects and vermin will have the field all to themselves, and decimate the crops. Nay, they do more than devour produce, for so unnatural a superabundance of insect life must be detrimental to the health of man. But on the other hand, if it were possible to destroy the insect world, would it be desirable? We firmly believe not. We cannot suppose that any creatures can exist without their uses, though we may be unable to penetrate them. But the thing to be deprecated is any disturbance of nature's balance of powers, which has been done by the destruction of birds, carried to the excess so well described and wisely lamented in the excellent report from which we have quoted so largely.—*London Examiner*.

LIME.

"Were lime a manure, it would be a noble substance for enriching and restoring fertility to lands worn out by a succession of crops; but, as worn out land is not restored to fertility by the application of lime, we are warranted to consider it in a different light; or, in other words, as an article to bring certain principles into action, previously possessed by the soil. This conclusion is sanctioned by experience; and experience is a far better guide than the most plausible theory."—*Morton on Soils*.

We think this short extract has, in very few words, set right a matter of great importance to the farmer, and corrected an error which is prevalent, not only in Great Britain, but also, to a considerable extent, in this country, viz: that lime will restore to fertility *all* lands that have been exhausted by cropping. But lime is not a manure, in the sense in which animal and vegetable matter is, it is not nutritive itself, it only assists in nutrition; and, however important the part it acts in this way, unless nutritive matter is existing in the soil, ready to be appropriated to the use of plants, the application of lime is entirely useless, as far as fertility is concerned. Every one can see, that when all the vegetable and animal matter has been exhausted in a soil, by ceaseless cropping, and nothing but the primitive earths, siliceous, alumine, lime, magnesia, &c. of which it is composed, remaining, that the application of more of any one of these primitive earths, will add nothing to its fertility or capability of producing vegetation.

If, on the contrary, there is vegetable or nutritive matter in the soil, lying dormant for want of exciting agents, or in an insoluble state, and therefore inaccessible to vegetation, an application of lime, by removing one or both these causes, may render the most essential aid to the farmer, in the production of his crops. A neglect of this important fact has led to serious error in the use of lime, in England, and in this country. Because, in some cases, lime has produced the best effects, it was at once expected in all; and, because, where nutritive matter existed to be called into action by the lime, a great increase of the crops were the result, it was supposed that this effect could be renewed at pleasure; and liming, without manuring, became at once the order of the day. As must have been expected, a failure in the crops, in such cases, has been the result; and a prejudice against the use of lime, resulting from its application on false principles, has succeeded the most unbounded confidence in its favor.

Lime is a noble substance; it cannot be dispensed with in soils, but, like the other earths, it is powerless alone. The man who eats curry or cayenne with his roast beef, does not expect his nourishment from them—they are only the accessories—the stimulating agents. The farmer who has just views on the subject of vegetable nutrition, does not expect his plants to subsist on the lime, salt or gypsum he furnishes them; nor does he expect that these stimulants of themselves, without the application, in some form, of vegetable or animal matter, of which the plants can avail themselves, will restore fertility to exhausted soils, or continue it in such as now possess it. No farmer should forget that no single substance can ensure fertility; not one of the earths, or one of the stimulating or nutritive manures, can do this; the presence of all is necessary; and the best proportions ensure the greatest productiveness in any soil.—*Albany Cultivator*.

WORSHIP GOD WITH FLOWERS.—Flowers are the memories of childhood, which accompany us from the cradle to the grave. I left my birthplace at the age of seventeen, yet the peonies, tulips and roses of my mother's garden are pictured in my mind with a vernal freshness. Teach your children to love flowers, and they will love home and all its inmates. Beautify the grounds around your dwelling with rich foliage, plants, and the bright blossoms of sweet flowers, and the faces of all who look upon the scene will be lighted with smiles, while their hearts will worship the great Giver of all good and perfect gifts to man. If I could be the means of creating a general taste for gardening and love of flowers, I should feel as though I had been of more benefit to my country than all the military heroes of the present age. Worship God with flowers. As He loves all that is beautiful and good, so will He love you as you make your home lovely.

THE CANADA THISTLE—*Cirsium arvense*.

There having been complaints as to this terrible pest among many of our farmers, and in order that our readers may be on the alert for it, and to take it at its first appearance, if unhappily it should by any possibility make its way on their farms, we present the annexed drawing of the plant and description of the same, with mode of eradicating, which we copy from the *Country Gentleman*:

"This a formidable weed in two respects. It spreads extensively by seed, and the roots being both perennial and creeping, the plants quickly extend into patches beneath the surface. The roots have been sometimes found several feet below, in porous subsoils; and as the fragments of roots are sufficient to produce new plants, it was formerly supposed to be incapable of eradication, without digging out every portion, which, in a large patch, would involve immense labour. This opinion has now been found to be fallacious, and by the observance of a simple principle, the whole subterranean net work of roots may be easily destroyed. *The roots cannot live, unless they breathe through their lungs, their leaves.* Keep the portion of the plants above ground from growing, and the whole patch may be destroyed in a single year. This may be accomplished in several ways. Small patches may

be smothered by covering them with boards, closing the joints with a second layer, to prevent a single plant from finding its way through. Sawdust, tan or straw, will accomplish the same end, if laid on thick enough. If a single plant, however, escapes, it will sustain life in a portion of the roots. Another way is to cut the plants off daily even with the surface of the ground, so that a single leaf cannot grow. The best way for common practice is to plow them under, and continue the plowing often enough to keep them smothered. If well and deeply done, once a month will answer the purpose. This mode succeeds best on heavy or clayey soils, which do not permit the thistles to find their way readily upwards. But even on such soils, the work must be very carefully performed, for if a portion of the weeds are but partly covered, they cannot be destroyed. On gravelly or other porous soils, it is more difficult to destroy them by plowing. The operation must therefore be more frequent on such soils, and greater care taken to do it deeply and in the most thorough manner. The Double plow will be found to answer an excellent purpose on these as well as all other kinds of soil.

GUNNY BAGS.—The inquiry is often made, "What is a gunny bag?" The *London Mechanics' Magazine*, tells all about it: It is a bag made from the coarse spun fibers of a plant which grows in India, of which there are many varieties. On the Coromandel coast this plant is called *goni*, and "gunny" is a corruption of this name. The cultivation of the *chuti, jute*, or "gunny" has been carried on for centuries in Bengal and gives employment to tens of thousands of inhabitants. It is said that three hundred thousand tons of *jute* are grown in India, of which one hundred thousand tons are exported as gunny bags, besides one hundred thousand tons in a raw state. The gunny bag is used for sugar, coffee, spices, cotton, drugs, indeed, almost every article which we pack in dry casks and boxes, is, in the East, packed in gunny bags. It is also made into mats, carpets, ropes, paper, and various other articles.

BE THANKFUL FOR COMMON BLESSINGS.—"Let not the blessings we receive daily from God make us not to value them, or not praise him because they are so common. What would a blind man give to see the pleasant rivers, and meadows, and flowers, and fountains, which we are allowed the privilege of seeing? Many other blessings we enjoy daily, and let us not forget to pay their praises, because it is a sacrifice so pleasing to Him that made the sun and us, and still protects, and gives flowers and showers, and stomach and meat; and so, 'Let everything that hath breath praise the Lord.'"—*Isaac Walton*.

FARM IMPLEMENTS AND MACHINERY.

The two great requisites for successful cultivation are a fertile soil, and the means for its working and pulverization. The first is attained by natural excellence combined with manuring, rotation, and ploughing in green crops. The second is accomplished by farm implements and machinery. Without the latter, no soil, however excellent, can be cultivated. They are as indispensable as the breathing apparatus to the life of an animal, or as vessels to the navigation of the seas. In nothing is the advancement of modern agriculture more conspicuous than in the rapid improvement of the tools and machinery of the farm.

Compare, for example, the old wooden mould-board plough, extensively used not fifty years ago, with the best modern improved iron or steel mould-board, easy running, smooth cutting, and inverting the sod almost with mathematical precision; or the old-fashioned mode of pounding out of grain with the flail, with the best improved threshers and separators. Observe the difference in expense between laboriously collecting the hay of a ten-acre meadow by means of hand-rakes and sweeping it up with the horse-power, with revolving or steel tooth-rakes, or the slow and fatiguing labor of dropping the minute seeds of root crops, when compared with the rapid and accurate distribution by the best seed drills. No laborer who has gone through the slow toil of swinging the hand-scythe and cradle day after day, will need any argument to prove to him the value of horse labor as applied to the best mowing and reaping machines, which shear off ten or twenty acre crops in a day. And during the present scarcity of labor, occasioned by the war, extensive farmers must have utterly failed to go through with their many operations but for the assistance rendered by modern implements for cultivating, drill-planting, harvesting, and threshing.

The amount of capital at present invested in farm implements throughout the United States is probably not less than five million dollars! How important that this money be *well* invested! The best implements will execute work not only better and more perfectly, but at a vast saving in expense, over those of bad construction. Take one of the simplest tools as an example: the common hand-hoe, one made of best steel, and of light, neat construction, will enable a laborer to do one-fourth more work than a heavy, clumsy one, or will save, one day in four, twenty-five days in every hundred of work—an amount, in a single season, more than fifty times as great as the difference in cost. * * What would be thought of the man who, to avoid the expense of buying a good plough, preferred to

spade up his fields by hand, or to carry his grain to market on his back, to obviate the cost of a farm wagon? He would commit the same kind of error, although perhaps more glaringly, as the farmer who neglects to avail himself of the best information on the machinery of the farm and the principles of its construction and use. Much loss has been occasioned by a want of knowledge of the principles which govern the working of all implements and machines, and many suffer themselves to be imposed on and deceived, when a simple and ready application of such principles would at once detect errors without resorting to expensive trial. * * *

IMPLEMENTS FOR TILLAGE.

These are chiefly the plough, harrow, cultivator, roller, and seed-drill, in their various modifications. It is our intention here to give a description of the different kinds, point out some of the advantages which they respectively possess, and the application of mechanical principles in their construction and use—and also engravings of some of the implements named.

THE PLOUGH.

This implement, which may be regarded as the chief means for successful tillage, is of such importance that it has from time immemorial become the symbol of the agricultural profession. Notwithstanding the many recent contrivances of rotary diggers, grubbers, terracultors, &c., it is not probable that the plough will be very soon superseded. Its great leading feature is simplicity; it consists substantially of a single part, or is one solid moving whole, although in its manufacture several parts are united together. This simplicity or oneness is of the utmost importance in an implement doing such work, subjected as it is to heavy force, and especially to irregular resistance and frequent heavy blows from stones and other obstructions. No complex implement can endure a constant repetition of such blows. Even the railway locomotive, with its great strength, would be soon beaten to pieces if removed from its rails of glassy smoothness, and subjected to repeated blows by obstructions in its way. * * All the complex substitutes for the plough, invented of late years, will doubtless result in failure for the same reason, however ingenious and perfect in other respects.

Since the wooden ploughs were used in the early part of the present century, down to the present time, this implement has become wonderfully improved. For perfect, smooth, even inversion of sod, and for deep, thorough, and complete pulverization, combined with ease of draught, it would seem that the best ploughs have very nearly attained perfection, so far as they can with the present form. Different modifications are provided for different purposes and soils. For sod ploughing, and in light

or sandy soils, a long mould-board for smoothly turning the sward is found best. Where the soil is more tenacious, and the friction or adhesion to the mould-board greater; a shorter one is more advantageous both for ease of draught and for pulverizing the newly-turned earth. For stony ground a short mould-board is absolutely necessary. For deep tillage the form should be such as to lift the earth upward to a greater height than for more shallow work. A variation is made in the cutting part, for lapping the furrows in heavy land for exposure to frost, and effecting drainage on the one hand, and for laying the furrows flat on light soils on the other. For turning in the top soil or sod deeply, and covering it well with the mellowed earth from the bottom of the furrow, nothing has proved equal to



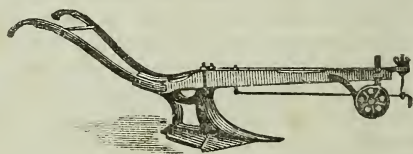
the Double Plough; and this, no doubt, would be the best implement for turning under such spreading and perennial-rooted weeds as the Canada Thistle, which, if repeatedly and well done, will totally destroy any patch in a single season, if the soil have some tenacity. * * Many theories have been advanced as to the best form of the mould-board, and a volume might be occupied with the consideration of the subject. It may be sufficient here to remark, that no mould-board should be accepted by a farmer which does not wear nearly equally in every part, both on account of its durability and of the ease with which the moving earth may slide over its surface. One is also objectionable which becomes clogged in some particular part, while other parts are scoured by the sod. The ease of draught may be estimated with some accuracy by a close-observing farmer who watches the exertions of his teams; but a good dynamometer (one form of which is a stiff spring-balance strong enough for measuring six or eight hundred pounds) is the only reliable and satisfactory measure of the ease of draught. —*Agricultural Report.*

DESCRIPTION OF THE DOUBLE PLOUGH.—It consists of two ploughs, placed one before the other, on the same beam. The forward one takes a furrow from three to six inches deep, separating the roots of the grass or vegetable matter, and lays its slice down in the bottom of the previous furrow; and the after one follows from five to six inches deeper, and raises and deposits its slice on the top of the forward one. In being raised and turned, the sub-soil is broken and mellowed, and spread loose and evenly over the sward or vegetable matter and manures, and in such depth as admits of ploughing and harrowing in the grain without disturbing them. The fermentation

and decomposition of the under stratum or vegetable matter and manures commence just at the time the germination and growth of the grain plants commence, and afford the latter the rich nourishment of their grasses at the very time it is most needed. The draught of the plough is less than that of most ploughs taking the same sized furrow; it does better ploughing in hard and stony ground, and ground not brought to smoothness by use, than is done with the common plough; a single ploughing with it disposes of the vegetable matter, and mellows the ground more effectually than is done in summer-fallowing with the common plough, by ploughing the ground twice.

THE SUBSOIL PLOUGH.

The subsoil plough follows directly after and in the channel made by the plough turning the surface soil, loosening and pulverizing the lower soil to any desirable depth, without bringing it to the surface. The subsoil plough is specially valuable in lands where the top soil rests upon hard-pan but a few inches below the surface; and in lands of a stiff clay or other tenacious soil. Although at first thought it may seem a paradox, yet in the working of such lands the use of the subsoil plough is of great advantage, both in dry and wet seasons. If permitted to do so, plants will, in a dry season, extend their roots deeply into the earth; and by use of the subsoil plough the stiff under soil or hard-pan is open-



ed and pulverized, so as to promote the ascent of moisture from below, as well as permit the roots of vegetation to push lower down, and away from the more parching influence of the sun: again, lands of a stiff compact soil, are in a wet season, naturally too cold, clammy and moist; but by being deeply loosened and opened, the excess of moisture filters below, the surface soil thus relieved is made light, mellow and warm, and the crops prosper accordingly. The harrow, cultivator, &c. will be treated of in our next.

CHEAP CHEESE.—Near Rome, N. Y., is a cheese factory which manufactures at a cost of one cent per pound. The care of it requires only four hands. The milk is brought from the farms every morning, and the cheese is divided among the proprietors in proportion to the number of gallons of milk furnished by each.

It is stated that linens of a coarse kind are now manufactured in Ireland, that are not only relatively but absolutely cheaper than cotton.

Live Stock Register.

FOOD FOR CATTLE.

Extract from Dr. Playfair's Lecture, delivered to the members of the Royal Agricultural Society :

The food of cattle is of two kinds, azotized and unazotized, with or without nitrogen. The following table gives the analysis of various kinds of food of cattle in their fresh state :

	Water.	Org. Matters.	Ashes.
100 pounds Peas.....	16.....	80½.....	3¾
100 pounds Beans.....	14.....	82½.....	3¾
100 pounds Lentils.....	16.....	81.....	3
100 pounds Oats.....	18.....	79.....	3
100 pounds Oat-meal.....	9.....	89.....	2
100 pounds Barley-meal.....	15½.....	82½.....	2
100 pounds Hay.....	16.....	76½.....	7½
100 pounds Wheat-straw.....	18.....	70.....	3
100 pounds Turnips.....	89.....	10.....	1
100 pounds Swedes.....	85.....	14.....	1
100 pounds Mangold-wurzel.....	89.....	10.....	1
100 pounds White Carrot.....	87.....	12.....	1
100 pounds Potatoes.....	72.....	27.....	1
100 pounds Red Beet.....	89.....	10.....	1
100 pounds Linseed-cake.....	17.....	75½.....	7½
100 pounds Bran.....	14½.....	80½.....	5

A glance at this table would enable a person to estimate the value of the articles as diet. Thus every 100 tons of turnips contained 90 tons of water.—But the value of inorganic matters which these foods contained, differed. Thus Mr. Rham states, that 100 pounds of hay were equal to 339 lbs. of mangold-wurzel. It would be seen that that quantity of hay contained 76 lbs. of organic matter, whilst the mangold-wurzel contained only 34 lbs.

One result on feeding animals on foods containing much water is, that the water abstracts from the animal a large quantity of heat, for the purpose of bringing it up to the temperature of the body, and in this way a loss of material took place. The mode proposed by Sir Humphrey Davy, of ascertaining the nutritive properties of plants, by mechanically separating the gluten, is unsusceptible of accuracy. The more accurate way is, to ascertain the quantity of nitrogen, which being multiplied by 6.2, will give the quantity of albumen contained in any given specimen of food.

The following table shows the equivalent value of several kinds of food, with reference to the formation of muscle and fat, the albumen indicating the muscle-forming principle :

	Albumen.	Unazotized Matter.
100 pounds Flesh.....	25.....	0
100 pounds Blood.....	20.....	0
100 pounds Peas.....	22.....	51½
100 pounds Beans.....	31.....	52
100 pounds Lentils.....	33.....	48
100 pounds Potatoes.....	2.....	24¾
100 pounds Oats.....	10½.....	68

100 pounds Barley-meal.....	14.....	68
100 pounds Hay.....	8.....	68½
100 pounds Turnips.....	1.....	9
100 pounds Carrots.....	2.....	10
100 pounds Red beet.....	1½.....	8½

The analyses in this table, are partly the result of Dr. Playfair's, and Boussingault's analyses. The albumen series indicates the flesh-forming principles, and the unazotized series indicates the fat-forming principles. By comparing this table with the former, it will be seen which foods contain not only the greatest quantity of organic matter, but what proportion of this organic matter is nutritive, and which is fattening, or that which furnishes combustible material. In cold weather, these foods be given which contain the larger proportion of unazotized matter, in order to sustain the heat of the body. Thus it will be seen, that potatoes are good for fattening, but bad for fleshening. Linseed cake contains a great deal of fattening matter, and but little nutritive matter; hence barley-meal, which contains a good deal of albumen, may be advantageously mixed with it. Dumas, a French chemist, states that the principles of fat exist in vegetables, as in hay and maize; and that, like albumen, it is deposited in the tissues unchanged. But Liebig regards fat as transformed sugar, starch, gum, &c., which has undergone a change in the process of digestion. This is why linseed cake is fattening; all the oil is squeezed out of the seed, but the seed-coat—which contains a great deal of gum and the starch of the seed—is left, and these are fattening principles.

The oxygen, introduced by respiration into the lungs, is destined for the destruction of carbonaceous matter; but there is a provision made for taking it into the stomach with the food, and this is done by the saliva. The saliva is always full of bubbles, which are air bubbles, and carry the oxygen of the atmosphere into the stomach with the food. The object of rumination in animals, is the more perfect mixing of the food with the oxygen of the air. This is why chaff should not be cut so short for rumination, as for non-ruminating animals, as the shorter the chaff is, the less it is ruminated, and the less oxygen it gets.—*Mark Lane Express.*

Cows.—Cows should have warm water for a few days after calving, otherwise they are very liable to colds, inflammation of the udder, &c. It is a good method as practised by many, to prepare the first drink by putting a shovelful of hot coals into a pailful of cold water, and after a few minutes take off the swimming coals, and then give the water to the cow, which must have become sufficiently warmed, and it will have acquired an alkaline quality, which is considered beneficial.—*Boston Cultivator.*

Love is the most intelligible when it is unable to express itself in words.

USE OF SALT IN THE FOOD OF CATTLE.

The following are extracts from a recent prize essay on common salt, by Dr. Phipson, of England :

"The use of salt in the food of cattle must not be looked upon as a direct producer of flesh, so much as a necessary element of the economy, without which animals are apt to perish from disease, but with which the body is kept in a normal and healthy state. Not many years ago a German agriculturist, Ubercracker, brought forward an experiment which is in direct accordance with this opinion. Wishing to obtain some exact notion of the influence which salt exercised upon his sheep, the flocks of which lived upon a low, damp pasture land, and received habitually a certain dose of salt, he fixed upon ten sheep, and struck off their usual allowance of salt. This remarkable experiment was continued for three years, with the following results : In the first year five of the ten died of rot and worms ; in this year the remainder of the flock, 450 head, lost only four sheep. The second year a new lot of ten sheep, deprived of salt, lost seven individuals ; the remainder of the flock, 364 head, lost five, only ; a little later the other three died also of diarrhea. The third year was very rainy. Sixteen sheep were selected and deprived of salt. The whole of them died in the course of the year of rot and vermicular pneumonia. * * *

In Great Britain, in the best farmed districts, we find the allowance of salt oscillating around the subjoined figures, taken as the center of basis : Calf, six months old, 1 oz. ; bullock or cow, one year old, 3 oz. ; Oxen, fattening, 6 oz. ; milch cow, 4 oz.

It is generally admitted, wherever salt forms habitually a portion of the horse's diet, that this animal amply repays the slight additional expense of trouble thus incurred. To mix salt with the food of the horse, colt, ass or mule, is a frequent practice in England and America. In these countries the usual allowance for a full-grown horse of middle height, is 2 ounces per diem. In Belgium, the quantity of salt appropriated to a full-grown horse by the government is little more than one ounce per diem. * * *

In administering salt, unless it be used as medicine, the more intimately it is mixed with the food, the better. This is not an easy matter with fodder, especially that which has been salted to preserve it, in which case we must endeavor to make a rough estimate of the amount of salt in a given weight of fodder, in order not to administer an injurious excess. In farms where oil or rape-cake is given powder, this being rather an indigestible food, the allowance of salt should be mixed with it, in preference to any other fodder.

It should be borne in mind that an excess of salt

is injurious to any animal ; and that is why the preceding figures are given as a kind of practical guide. An excess of salt causes irritation of the mucous membrane and causes several kinds of diseases, especially in sheep. With horses an excess of salt has been known to produce dysentery ; and in oxen diseases of the blood. Salt should never be given to cattle when a deficiency of food does not enable them to receive abundance of nourishment ; in which case we excite appetite without satisfying it, and the animals lose flesh rapidly. Salt is to be prohibited, also, wherever congestion of any important organ is observed, or where we have perceived inflammation of the bowels. In such cases we must not be guided by the instinct of the animals themselves. In some diseases of the digestive organs salt has proved beneficial. Thus in cases of rot in liver, accompanied by loss of appetite, paleness of the membrane, swellings under the throat, avoid ground which communicates the rot, and give the sheep five grains of iodine and half an ounce of spirits of turpentine twice a day, and let them have free access to salt. And again, for the disease called 'red water,' a species of dropsy, give liberal supplies of food, a dry resting place and rock salt.

Considered as a medicine, salt purges animals at the following doses : Horses, 8 to 10 oz. ; Oxen, 10 to 16 oz. ; Sheep, 2 to 3 oz. ; Pigs, 2 to 3 oz. ; Dogs 1 to 2 oz. It becomes a poison at the following doses : Horses, 2 lbs. ; Oxen, 3 lbs. ; Sheep, 6 to 8 ounces ; Pigs, 4 to 6 ounces.

SHELTER FOR SHEEP.

There is no season of the year when sheep are more liable to lose all they have gained than during the fall and early winter ; and if they do, there is an end to the hopes of a crop of wool. For the want of food has the effect of stopping the growth of the wool, and the moment the growth is stopped, the end of the fiber is completed ; a change takes place, it becomes dead, in a manner analogous to the stem of ripe fruit, and a renewal of good feed after these months, and after the growth of the wool has been once stopped, only prepares the skin to send forth a new growth that pushes off the old fleece, and causes it to be lost before shearing time. Nothing is more evident from this than that the economy of the wool-grower consists in keeping his sheep well fed during the early part of the winter, and also well protected from storms ; for it is plain from the fact that wool begins to grow, even on poorly kept sheep, as soon as the temperature of spring permits the animal economy to divert some of the supplies from being consumed in keeping up the vital organization, to the increase of the fleece, that heat has as much to do with the growth of wool as with the growth of plants. Hence we say give sheep protection at an early date.—*Scientific American*.

THE DORKING FOWL

The Dorking, for all purposes, has long been considered the best domestic fowl in England; and of late years, since it has become better known, is come in favor in this country. If the Dorking was as hardy and as easily raised as the game, it would be the best fowl by far for general purposes. It has a plump, square body, with a remarkably full breast; short, stout, white legs and skin, and usually five toes on each foot. There are both white and colored birds, the colored generally being considered the more hardy and a little the heavier. Their weight is from five to eight, and sometimes nine pounds. They feather early, mature young, fatten easily, have a white, fine-grained and tender flesh, which is excelled in flavor only by the game fowl.—

Where crosses are received with favor, the Dorking is a fine fowl for the purpose, either to mate with the game or our common fowl.

They are most excellent layers, good and steady sitters, and kind and careful nurses. They are the capon fowl of England, and are bred in great quantities for the luxurious tables of the wealthy classes in the counties about London.

Food and Treatment for Hens.

Linseed meal is found to be a great promoter of egg-laying. Mixed with scalded meal or shorts, or with sour milk, it is readily eaten, and is a good substitute for animal food and insects. Hens like Indian corn better than any other grain, and it is their cheapest food. For confining hens, a covered room with a dry earth floor, is much better than an open yard, which the rains keep in a filthy state much of the time. With sand to roll in, hens may be confined under cover the whole season. Half an hour before sunset they should be let out to range over the yard and garden. They will then be too busy picking grass, gravel, &c., to scratch and do mischief, being always in a hurry to return to the roost before twilight. Hens thus kept will more than twice pay for their keeping, if not too old to lay well. Two or three day's imprisonment in a coop will break up Black Spanish hens from sitting, and they soon commence laying again if properly fed. It is only profitable for a villager to raise a few early chickens to renew his laying stock, as chickens are great and increasing feeders, eating when half grown, much more than old fat hens.



Rearing and Feeding Young Ducks.

The best mode of rearing ducklings depends very much upon the situation in which they are hatched. For the first month, the confinement of their mother under a coop, is better than too much liberty. All kinds of sopped food, buckwheat flour, Indian or barley meal and water mixed thin, worms, &c. suit them. No people are more successful than cottagers, who keep them for the first period of their existence in pens two or three yards square, cramming them night and morning with dried pellets of flour and water, or egg and flour, till they are judged to be old enough to be turned out with their mother to forage on the common or village pond.

When ducklings have been hatched under a common hen, or a turkey hen, they are not generally allowed to go to the water till they become a little hardy by remaining on land; but the moment they see water, they naturally plunge into it, to the great alarm of their foster-mother, which cannot follow them; a circumstance which has been remarked by the earliest writers, and is finely depicted by M. Ross-ett, in his "Poème de l'Agriculture."

It is necessary, to prevent accidents, to take care that such ducklings come regularly home every evening; but precautions must be taken before they are permitted to mingle with the old ducks, lest the latter ill-treat and kill them, though ducks are by no means so pugnacious and jealous of new comers as common fowls uniformly are.—*A. Poultry Yard.*

No man has a right to do as he pleases, unless he pleases to do right.

USEFUL RECIPES.

HORN DISTEMPER.—Spirits of turpentine rubbed in around the base of the horns, when the disease is in its incipient stages, will usually arrest its progress, and effect a cure. If it has so far advanced as essentially to lower the temperature of the horns, or horn, (for sometimes only one is attacked,) boring with a large nail gimlet on the under side of the horn, three or four inches from the head, will be necessary. If the horn is found very hollow at this place, another opening still nearer the head, may be necessary. The horns must be kept open, that the matter may freely escape; and they should be thoroughly syringed or washed out, twice or three times a day. Salt and water, or soap suds, is good for this. Allowing the matter to escape, relieves the distress of the animal, checks the inflammation about the head, and unless delayed too long, effects a cure.

CURE FOR WOUNDS—KING OF OILS.—This invaluable remedy for wounds in cattle or horses, particularly the latter, has lately been brought before the public, by Silas Gaylord, of Skaneateles, and we have known some very surprising cures performed by it, in the case of severe wounds in horses. The following are the directions given for preparing the medicine: 1 ounce of green copperas, 2 ounces of white vitriol, 2 ounces of common salt, 2 ounces of linseed oil, 8 ounces of West India molasses, boil over a slow fire fifteen minutes, in a pint of urine; when almost cold, add one ounce of vitriol, and four ounces of spirits of turpentine. Apply it to the wound with a quill or feather, and the cure will be speedily effected.

SCOURS AND DYSENTERY IN SHEEP.—The following directions for the cure of this disease, are from a paper by Mr. S. W. Jewett, of Vt.: "Looseness in sheep or scours, is one of the most sudden and rapid disorders that attacks them; especially thin sheep and lambs. It is generally caused by eating raw, or early cut hay. The best method to cure and prevent is, to give them daily a few messes of wheat in the sheaf, a regular quantity of salt at all times. If it occurs in winter, brine ripe hay in the seed, wheat chaff is good, as is a small quantity of oats, and a few pine or hemlock tops. Keep them a few days on ripe hay or corn fodder."

TO CURE SHEEP SKIN WITH WOOL ON.—Let the skins be taken from the carcass without flesh adhering, and it is best to have two at the same time. Pulverise alum and saltpetre in equal portions, and sprinkle the mixture lightly on each skin, then lay the flesh sides together and hang them up to dry. When they have hung three or four days, take them down and rub the flesh side with a blunt knife till the skin be thoroughly broken, and the work is completed.

DOMESTIC RECIPES.

RICE SNOW BALLS.—Take small tart apples, pare them, and take out the cores with a knife, filling the cavity with a stick of cinnamon or of mace. Put each one in a small floured bag, and fill the bags about half full of unground rice. Leave plenty of room for the rice to swell. Put them in a pot of water, with a table spoonful of salt to two quarts of water. Much water will be required, as rice is a great absorbent. Boil an hour and twenty minutes, then turn them carefully out of the bags into a desert dish, and garnish them with marmalade cut in slices. Serve them up with butter and sugar.

RICH BREAD PUDDING.—Cut a pound loaf of good bread into thin slices. Spread them with butter as for eating. Lay them in a pudding dish—sprinkle between each layer of bread, seeded raisins, and citron cut in small pieces or strips. Beat eight eggs with four table spoonfuls of rolled sugar, mix them with three pints of milk and half of a grated nutmeg. Turn the whole on the bread in the pan, and let it remain till the bread has taken up full half the milk; then bake about three-quarters of an hour.

INDIAN BOILED PUDDING.—Make a stiff batter by stirring Indian meal into a quart of boiling milk or water. Then stir in two table-spoonfuls of flour, three of sugar, half a spoonful of ginger, or two tea-spoonfuls of cinnamon, and two tea-spoonfuls of salt. If anything extra is required, add two or three eggs well beaten, but they can be dispensed with, and some add a little chopped suet. Such puddings require a long boiling. They will be good in three or four hours, but better for being boiled five or six, and some give a boiling of eight or nine. They require good sauce at eating.

TO CLEAN WHITE KID GLOVES.—Stretch the gloves on a clean board, and rub all the soiled or grease spots with cream of tartar or magnesia. Let them rest an hour. Then have ready a mixture of alum and Fuller's earth (both powdered,) and rub it all over the gloves with a brush (a clean tooth-brush or something similar,) and let them rest for an hour or two. Then sweep it all off, and go over them with a flannel dipped in a mixture of bran and finely powdered whiting. Let them rest another hour; then brush off the powder, and you will find them clean. On no consideration clean gloves with turpentine, as you will be unable to wear them on account of the smell.

REMEDY FOR CUTS, BOILS, OR SORES OF ANY KIND. Take spirits of turpentine, put in a cup, and hold it over the fire until it smokes, then take a swab about the size of a match, and touch the part affected two or three times. It is drawing, and healing, and should be used two or three times a day; after it is applied, salve should be put on, which will relieve the pain greatly.

The Apiary.

Two Queen Bees in a Hive.

R. B. Olott, Union county, Pennsylvania, contributes to the *American Agriculturist* an account of the following singular occurrence which he noticed in his apiary: "Some time in July last, having a queen bee at my disposal, and not wishing to destroy her myself, I put her to the entrance of a late second swarm in which she readily entered. Wishing (Sept. 1st) to use this colony to raise Italian queens, I removed the queen, and in returning the combs, to my astonishment I found another queen. This puzzled me considerably, as I never noticed or heard of such a thing before. I returned the queen I had removed, and then took out the combs, leaving the two queens and part of the bees in the hive. I watched them several hours to see whether the queens would quarrel if they should meet. The bees kept constant running about the hive, and the queens came in contact several times, but apparently did not notice each other, with the exception that at one time one took hold of the other's wing and held her for a second or so, but soon passed on. I then transferred the queens with part of the bees to an observing hive containing one comb, in order to notice their actions. When not molested, the queens moved about the comb apparently unconcerned. I kept them so for 48 hours, then returned one to the hive, and gave them an empty comb to ascertain if these queens were both fertile. This comb was soon supplied with eggs. I then removed this queen and introduced the other, but egg laying continued as before. I then returned the other queen to the hive. I have examined the colony frequently since, and always found the queens among the bees, but never on the same comb. Whether one of these queens was that which I had introduced in July, I cannot say, but it appears likely. This verifies the old saying that there are exceptions to all rules. Has a similar case been noticed before? I shall endeavor if possible to winter this swarm, to ascertain if these queens will remain together a whole season."

Bees Working in Two Hives.

The following remarkable incident is related by a correspondent of the *London Agricultural Gazette*: "On the 26th of June this year, I hived a very large swarm of bees in a straw hive. Before they had been in it many days, they discovered an unoccupied hive about two feet distant from their own, half filled with clean empty combs. They sagaciously took possession of it, and used it as a storehouse for honey, while combs were being constructed in their new domicile. At night they did not abandon

on their store-house, but left a guard of about 500 bees, who remained there contentedly, without any apparent concern at the absence of the queen. This hive was made of wood, with glass windows, so that I could examine the interior, day and night — I could see the honey in the combs, and the bees clustered between them, and coming out by hundreds to the glass, when I held a light to it at night. During the day, the bees at the mouth of the store-house hive buzzed and ventilated, just as if the queen had been there. At dusk, some of them flew to their own home. After using the extra hive for about three weeks, the bees removed the honey from it to their permanent abode, it being no longer required for the harvest which was for the time too abundant for their accommodation at home."

HOW CHANGE OF SEX IS ACCOMPLISHED IN A BEE-HIVE.—Carpenter informs us that in every hive of bees the majority of individuals are neuters, which have the organs of the female sex undeveloped, and are incapable of reproduction, that function being restricted to the queen, who is the only perfect female in the community. If by any accident the queen is destroyed, or if she be purposely removed for the sake of experiment, the bees choose two or three from among the neuter eggs that have been deposited in their appropriate cells, which they have the power of converting into queens. The first operation is to change the cells in which they lie into royal cells; which differ from the others in form, and are of much larger dimensions; and when the eggs are hatched, the maggot is supplied with food of a very different nature from the farina or bee bread which has been stored up for the nourishment of the workers, being of a jelly-like consistence and pungent character. After the usual transformation, the grub becomes a perfect queen, differing from the neuter bee, into which it would otherwise have changed, not only in the development of the reproductive system, but in the general form of the body, the proportionate length of wings, the shape of the tongue, jaw and sting, the absence of the hollow in the thighs where pollen is carried, and the loss of power of secreting wax.

POWDER OF MILK.—The powder of milk, added to water, forms an agreeable drink, and an excellent substitute for milk:—Milk, two pints; water, one ounce; sugar one pound. This mixture is then to be gently heated and constantly stirred. When it is three-fourths evaporated, the sugar is to be gradually added and the whole briskly stirred. After it is perfectly incorporated, the mixture is to be removed from the fire, poured into plates, and dried in an oven. When perfectly dry it is to be finely powdered and kept in well-stopped bottles. One or two teaspoonfuls is sufficient for a cup of tea or coffee.

THE
MARYLAND FARMER & MECHANIC.

AT \$1.50 PER ANNUM,
 PUBLISHED ON THE 1ST OF EACH MONTH,
 BY
S. S. MILLS & CO.
 No. 24 South Calvert Street,
 CORNER OF MERCER,
BALTIMORE.

TERMS.—\$1.50 per annum in advance. Six copies for \$7.50. Twelve copies for \$15, and a copy to the getter up of the club.

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S. SANDS MILLS, } PUBLISHERS AND PROPRIETORS.
 E. WHITMAN, }

BALTIMORE, FEBRUARY 1, 1864.

TO OUR AGRICULTURAL FRIENDS.—Our friends and the friends of agriculture, into whose hands this number may fall, will greatly oblige us by presenting the claims of "THE FARMER AND MECHANIC" to their friends and neighbours. There are many farmers and residents of the suburbs of cities and villages, who are not subscribers to any journal devoted to agriculture and its kindred sciences, who could be easily induced to forward us their names, if the character and claims of our journal were properly presented to them. A very little effort would secure a good list, in almost any neighbourhood.—Any one sending us *five* names with the cash, will be entitled to a sixth copy. Subscription price per annum, \$1.50.

TO CORRESPONDENTS.—Those who may have any useful facts at command, in relation to rural economy, or mechanics, are invited to make "The Farmer and Mechanic" the organ for their publicity—they will at all times receive a welcome. We suggest they be as brief as the subject will admit of.

POSTAGE ON THE "FARMER" is only 3 cents per quarter, if paid in advance by the recipient—or 12 cents a year payable in advance at the office where received.

OUR SUPPLEMENT.—We are compelled for this number to issue a Supplement of 8 pages, so as to accommodate the large demand upon our advertising columns, thereby enabling us to offer the full number of 32 pages of reading matter. As a general rule we desire that there shall be no interference with our regular amount of reading, though the arrangement is made at a heavy additional expense.

Reading Rooms of the "Farmer and Mechanic."

We have prepared a large and elegant Room in our Buildings, in connection with our office, as a Reading Room, for the benefit of our friends from the country, or the city, who may desire to avail themselves of its advantages, when leisure to visit us offers. We propose to have on file all the leading Agricultural Journals of this country, as well as some of the European—all the county papers of this State, many from the adjoining States of Pennsylvania and Delaware, together with Books on Agriculture and its kindred sciences—Catalogues of Implementation Manufacturers, Seedsmen, Nurserymen, Fertilizers, &c., &c. The following is a list of papers now on file and to which we are constantly adding:

Rural New Yorker, Rochester, N. Y.
 Boston Cultivator, Boston, Mass.
 Country Gentleman, Albany, N. Y.
 American Stock Journal, New York city.
 American Agriculturist, New York city.
 Scientific American, New York city.
 Gardeners' Monthly, Philadelphia, Pa.
 Farmer and Gardener, Philadelphia, Pa.
 The Wool Grower, Cleveland, Ohio.
 The Farmer's Home, Cincinnati, Ohio.
 Maine Farmer, Augusta, Maine.
 Kennebec Courier, Bath, Maine.
 The Rural American, Utica, N. Y.
 Baltimore County Advocate, Towson town, Md.
 Cecil Whig, Elkton, Md.
 Cecil Democrat, Elkton, Md.
 Cambridge Intelligencer, Cambridge, Md.
 Chestertown Transcript, Chestertown, Md.
 Worcester Shield, Snow Hill, Md.
 Southern Ægis, Belair, Md.
 Maryland Citizen, Centreville, Md.
 The Prince Georgian, Upper Marlborough, Md.
 Mercantile Journal, N. Y.
 Lancaster Intelligencer, Lancaster, Pa.
 The Artificer, Seneca Falls, N. Y.
 Marlborough Gazette, Upper Marlborough, Md.
 Civilian and Telegraph, Cumberland, Md.
 Hagerstown Mail, Hagerstown, Md.
 Rural Advertiser, Philadelphia, Pa.
 Maryland Union, Frederick, Md.

EXHIBITION ROOM.

We propose to connect with our office an *Exhibition Room*, if it meets the encouragement of our friends, where rare and curious productions of Fruits, Flowers, Vegetables, &c., &c., may be deposited for the inspection of the public.

THE GARDENER'S MONTHLY.—We received the January No. of this valuable monthly, edited by Thos. Meehan, Esq. Its columns are filled with matter interesting to the horticulturist, florist, and others. It is published in Philadelphia, at \$1.50 per year.

PENN. FARMER AND GARDENER.—The January No. has been received, being the commencement of the 6th volume. It is filled with choice reading in every department of rural economy. It is published in Philadelphia, at \$1 per year.

SETTING OUT ORCHARDS AND PLANTATIONS OF FRUITS, BOTH LARGE AND SMALL.

We are about to offer our readers a piece of advice, which, however strange it may sound to them at the present time, they will thank us hereafter for having given them. It is this. Plant, and plant early, as much space as can be spared with every variety of fruit—*both large and small*. In the first place it will be found profitable; and in the second, there is no longer any reason to fear that the supply will be in advance of the demand. To all persons owning places within easy reach of a large city, as well as to those who have the facilities of rail or water carriage, but especially the latter, the opportunity was never so favourable as it is at present for deriving a considerable income from the sale of fruit, and not of fruit alone, but of all kinds of vegetables that can be put up by the hermetical sealing process. It is fruit, however, to the growth of which, more or less extensively, we would call the attention of our friends. Apples, Peaches—especially the latter—Pears, Plums, Cherries, Apricots, Currants, Raspberries, Strawberries, and Grapes even. All these should be cultivated, for all now find a ready market and a quick sale at profitable prices. The time was when fruit, from the fact that it is a perishable article and could therefore be only sold in limited quantities, from day to day, was a hazardous product to depend upon as the demand was only for immediate table use, and if not sold at once it was spoiled. We have ourselves in by gone years hauled cart load after cart load of the finest peaches to the hog pen, because of the glut in the market, and the low price of this delicious fruit, which would not even justify hauling seven miles at twenty-five cents a bushel, and with the hazard of failing to sell even at that price. But the practice which has grown up within the past few years, of canning every species of fruit, and the enormous extent to which this business is now prosecuted has entirely changed the fortunes of the fruit grower.—Now the difficulty is not to sell fruit but to furnish a supply equivalent to the demand—and those who enter into the business early, attend to it properly, and bring their fruit in the best condition to market will reap a rich reward for their labours. We do not know a mode in which the lighter lands of the Middle States, wherever the aspect is favourable, could be better employed than in fruit culture—and as the demand both for home consumption and for export will inevitably increase with every succeeding year, there is but little, if any fear, that the business will be overdone. A peach orchard set out this spring will be in good bearing within four years—a plantation of raspberries within the same period—a plantation of blackberries, the Lawton is the best, within three years at the farthest—

whilst excellent crops of the strawberry may be had the second year after planting.

We have thrown out these hints, at this time, because the period is now at hand when those who desire to take advantage of this altered state of things should begin to prepare the ground for their orchards of large, and plantations of small fruits, and whatever may have been their experience in the past, we now say to them that with proper kind of management in growing these fruits, and with due care in bringing them to market in the best possible condition, they will find it the most profitable business in which they can engage.

THE AGRICULTURAL REPORT FOR 1862.—From the Hon. Isaac Newton, Commissioner of Agriculture, we have received this very valuable work, the best probably, issued from that Department for years. It contains a variety of well prepared articles on almost all subjects bearing on Agriculture and rural economy generally, and would have great influence over the progress of our farmers, if it could be widely distributed among them—but as the limited number issued excludes that idea, we shall from time to time draw on its pages for the benefit of our readers.

THE HAMBURG INTERNATIONAL AGRICULTURAL EXHIBITION.—Ex-Gov. Wright, of Indiana, who attended the International Agricultural Exhibition held at Hamburg, has made an official report, in which he says that eight acres of land were occupied by the exhibition. Buildings were erected for the accommodation of more than 4,000 entries of stock, machinery, locomotives, steam engines, steam plows, and farming implements, mineral products, artificial manures, plants, trees, fruits, flowers and seeds.—Thirty-four nationalities were represented by the contributors, which included 4,000 of the finest horses, cattle, sheep and swine. Some of the sovereigns were contributors.

Three thousand machines and farm implements, and seventy-five steam engines were exhibited. Ex-Governor Wright says he is convinced of the complete success of steam plowing, and thinks we are not sufficiently mindful of the progress of Great Britain, and other portions of Europe in agricultural implements, though we surpass others in cheap labor-saving machines, such as thrashers, reapers, &c. American reapers were awarded the superiority.

SCIENTIFIC AMERICAN.—This highly valuable journal came to us on January 2d in an entire new and beautiful dress—and stored, as usual, with a great variety of useful information to the mechanic and others. It should be in the hands of every one engaged in mechanical and scientific pursuits. Subscription price \$3 per annum. Munn & Co., publishers, New York.

Annual Meeting and Election of the Corn and Flour Exchange.

The annual meeting of this body was held on the 4th of last month. At 11 o'clock, WILLIAM CRICHTON, Esq., was called to the chair, with J. P. PAGA, Esq., as Secretary—when the President, HENRY M. WARFIELD, Esq. read his annual report, from which we make the following extract, as likely to prove of interest to our readers:

"The frequent rains during our wheat harvest, damaged to a very large extent the prolific and promising crops with which our soil was blessed, thereby deteriorating very sensibly the character of usual supplies, and rendering it imperative to seek from other sources, especially white wheats, the choice varieties of which Kentucky has appeared during the present season.

"The character of our Red Wheat has been fully maintained, even under the trying ordeal to which the general crop was subjected. Ripening early, being more hardy than most varieties of white wheat, our farmers were better enabled to secure them in condition and without so much injury to their color as would have been otherwise the case, had they not possessed these desirable peculiarities. As far as quantity is concerned, the crop of all varieties of Wheat in this State has proven to be fully equal to our preceding one, and its quality only deteriorated by the excessive rains which were experienced immediately after harvest, and which has seriously affected its value. It is believed that owing to the long continued drought during the period for planting corn and seeding oats, that the yield of these staples is very far below an average one, and this statement is borne out by the reported receipts to which your attention has been called."

After the reading of the report an election was held for 15 Directors for the present year, which resulted in the selection of the following gentlemen: William Chesnut, Thomas Whitridge, Joseph O. Foard, Francis White, Robert Tyson, George Small, Jas. A. Hooper, B. F. Phillips, Luther J. Cox, Jr. P. H. Magill, Samuel Duer, S. G. Matthews, M. Roberts, John G. Hewes, C. W. Slagle.

FLORICULTURE.—We would call attention to the articles in our Floral Department of each month, from the accomplished Florist, Mr. BRACKENRIDGE, who was the chosen aid of the eminent DOWNING, in the adorning of the Capitol grounds at Washington. To all engage in Floriculture they will prove useful and acceptable.

RECEIVED.—From O. Ames & Co., Boston, their descriptive and illustrated Catalogue of Agricultural and Horticultural Implements and Machines.

It is calculated that the wool clip of Minnesota the present year will not be less than 500,000 lbs.

UNITED STATES AGRICULTURAL SOCIETY.—The annual meeting of the United States Agricultural Society was held at the Smithsonian Institute, Washington City, on the 13th of January last. B. B. French was elected president, with one vice-president from each of the loyal States; Ben. Perley Poore, Secretary; Joseph F. Brown, treasurer; executive committee, Isaac Newton, commissioner of agriculture; John Jones, Delaware; Frederic Smyth, New Hampshire; Ward H. Lamont, Illinois; W. B. Todd, District of Columbia; Jas. S. Grinnell, Massachusetts; J. R. Dodge, Ohio.

A resolution was adopted favoring an exhibition of stock, agricultural machines, products of textile fibres and wool, products of sorghum, native wines, etc.

Also, a resolution commending the system for the collection of statistics adopted by the Department of Agriculture, and the publication of reports. The meeting then adjourned till the 24th of February.

NATIONAL WOOL GROWERS' ASSOCIATION.—The annual meeting of this body was held in Columbus, Ohio, on the 5th of last month. They recommended a tax of \$1 a head on dogs. The loss of wool growers in Ohio, by the destruction of sheep by dogs, was over two hundred thousand dollars per annum, and the number of dogs said to be half million. A resolution was adopted in favor of an increased tariff on foreign wool, putting wool growers on the same footing as American manufacturers.

PATENT COMMITTEES.—The following are the Senators and Representatives who compose the Patent Committees:

Senators.—Edgar Cowan, of Pa., chairman; Ten Eyck, Sherman, Ramsay, and Saulsbury.

House.—Thomas A. Jenckes, of R. I., chairman; Leonard Meyers, Noble, Hubbard and Chandler.

STATE COMPTROLLER'S REPORT.—We have received from the Hon. S. S. Maffit, Comptroller of the Treasury of Maryland, his late report, and we hazard nothing in saying that it is one of the ablest and most satisfactory reports ever submitted to the State Legislature. Such is the condition of the Treasury that he suggests a reduction of certain taxes. The "balance in the general Treasury on September 30, 1863, was \$1,206,069.97 to meet future demands, which, under existing liabilities, were comparatively very inconsiderable."

The imports of foreign wools into the port of New York during 1863 were \$2,000,000 greater in value than that of 1862.

The hog cholera is making great havoc in Montgomery county, Pa. One gentleman has lost forty porkers by this disease.

SPECIAL NOTICES.

The time is rapidly approaching when grass and grain will need cutting—labor being scarce, Reapers and Mowers will be in demand—to meet that demand McCormick's Reaper and Mower is offered by Spear & Brothers, 41 S. Charles street, Baltimore. After the grasses, &c. are cut, Ingersoll's Hay Press,—claimed to be "good and cheap"—can be supplied for that purpose, and should you have need to weigh it, Howe's Platform Hay and Cattle Scales are offered by the same firm.

Before harvest is on you, a decision must be made as to what Mower and Reaper you will use this year of 1864—to aid you in this, Bruster & Griffith, 49 N. Paca street, Baltimore, calls your special attention to their Buckeye Mower and Reaper, and Buckeye Horse Rake, which they claim to be inferior to none.

You are offered Peruvian and Swan Island Guano—Bruce's Concentrated Fertilizer—Hoyts' Super Phosphate of Lime, Ground Bones, &c., by Geo. E. White, & Co., 55 Cliff street, New York. Dealers and farmers can be supplied in any quantities on the most reasonable terms.

Tobacco planters and others are offered the Excelsior No. 1 Peruvian Guano and Soluble Phosphate, which is said to be superior for that crop, though extensively used for Corn and other spring crops. Also, Bone Dust and Super Phosphate of Lime—both of which abound in fertilizing qualities. J. J. Turner & Co., 42 Pratt street, Baltimore, can furnish them of standard quality and in any quantity.

After your grain is harvested and threshed, it must be prepared for market by being thoroughly cleaned—to do this, growers of grain can secure Montgomery & Brothers Double Screen Rockaway Grain Fan, "celebrated for their efficiency, durability, and ease in working."

In this Number we recommend the cultivation of Fruits, both large and small,—those who intend to heed our suggestions, can avail themselves of the liberal offer of Trees, Plants, &c. of our friend, Robert Halliday, Pennsylvania Avenue and Dolphin streets, Baltimore, who has on hand a large and well assorted stock.

In Alexandria, Virginia—Groceries, Feed, Plow Castings, and Fertilizers of various description, are offered to the trade and farmers, by Geo. E. White & Co., whose facilities enable them to accommodate all on the most satisfactory terms.

Fertilizers for the Spring crops will soon be called into requisition by our farmers—with this view they are offered Reese's Vitriolized Phospho-Peruvian Guano, a combination of Dissolved Bone Phosphate, with Peruvian Guano—also, "Moro Phillips'" Super Phosphate of Lime, which is claimed as good for "top-dressing wheat and grasses," by John Reese & Co., 71 South street, Baltimore.

Those of our friends wishing to adorn their dwellings, &c., with taste and elegance in the way of Mantle and Pier Mirrors, Vases, Cornices, Picture Frames, in the most artistic and *recherche* style, need but call on Harrington & Mills, 140 Baltimore street to have it consummated. They have constantly on hand Framing and Gilt Work, French and German Looking Glasses, Elegant Engravings, House Furnishing Articles, &c., &c., which cannot fail to please the most fastidious taste.

Those in need of Grape Vines, of the various sorts—or wine "sparkling and bright"—are referred to A. Harshbarger, Newton Hamilton, Mifflin county, Pennsylvania.

If land is to be made fruitful, the plow and liberal manuring must do it—to assist the farmer in this laudable effort, Kimberly Brothers, Pratt and Patterson streets, Baltimore, again offer their Animal Compost or Cereal Fertilizer, which has now been established for 12 years—it is composed, as claimed, of blood, bones, fish, guano, refuse animal, and other matters of a fertilizing quality.

If the work is properly executed, manufacturers are not to blame if our farmers are not enabled to select from the many good Reapers and Mowers now offered for their approval. A new candidate, in this market, is offered in Howard's Combined Reaper and Mower, said to "possess many improvements and advantages over others." It is not our province to decide upon the merits of the many Reapers presented, but simply to call the attention of farmers to them—to the end that they may decide for themselves. E. Whitman & Sons, 24 South Calvert street, are the manufacturers. They also call attention to their Plows and Plow Castings, Horse Rakes, Seeds, &c.

For 24 years "Night Soil," or Poudrette, has been manufactured and offered to the farmers of this country as an unequalled fertilizer for Tobacco, Corn, Potatoes, and Garden Truck. Those who desire to test its efficacy, can do so by applying to Bowen & Mercer, No 3 Exchange Place, Baltimore.

To meet the anticipated demand of Fruit Trees, Vines, &c., this season, an offer is made by John Saul, Washington, D. C., to supply them in every variety and in any quantity.

As economy is enforced by the high-priced times, your attention is called to the Cheap Fertilizers manufactured by the Agricultural Chemical Company, R. B. Fitts, Agent, 413½ Arch street, Philadelphia.

If you propose to cultivate Cranberry Plants, of the Red and Cherry varieties, Geo. A. Bates, of Bellingham, Mass. offers them for sale low.

EXTENSION OF THE WESTERN MARYLAND RAILROAD. The proposed extension of this road, from Union Bridge, Carroll county, to Hagerstown, Washington county, is beginning to attract public attention, not only in this city, but throughout Western Maryland. Meetings are being held throughout that section to aid its success, and the farmers and manufacturers along the route are said to be in earnest on the subject, and will subscribe liberally to effect the extension. The city of Philadelphia has already railroad communication with Hagerstown, but it extends over a distance of 180 miles, while Baltimore city is only 80 miles distant. The extension, when completed, will bring to our city the trade of a large and wealthy section of Maryland, which is now, for want of direct communication, diverted to Philadelphia.

BLOATING IN CATTLE.—Where other means have failed to reduce bloating in cattle, the volatile spirit of ammonia has frequently afforded almost immediate relief, owing to its chemically decomposing the gas generated in the stomach. The dose for a cow or ox, is a table spoonful; a tea spoonful for a sheep, diluted with water, or other convenient liquid.

Grape Culture.

Culture of the Grape Vine for February.

By A. HARSHBARGER, *Juniata Vineyard, near Newton Hamilton, Mifflin County, Pennsylvania.*

This month the grape vine requires preparation for the ensuing crop in spring pruning; which should be done in mild weather. Care must be taken that the vines are not pruned or handled when frozen. Tender vines that have been covered, should be left protected until all danger of freezing is over. Cuttings should be tied up in bundles of 100 to 200 and put away in a cellar; set up on the butt ends in an inch or two of sand, to preserve them until the frost is out of the ground. Poles and trellis can now be prepared.

CULTURE OF THE GRAPE.

BY ROBERT BUCHANAN, ESQ.

THE VINEYARD.

In establishing a Vineyard, it is a matter of much importance to select the right

POSITION AND SOIL.

A hill side with a southern aspect is preferred, although an eastern or western exposure is nearly as good. Some have recommended the north, on account of safety from late spring frosts, but it will scarcely afford sun enough to ripen the grapes in cold, wet seasons (if the declivity is steep), and may perhaps be more subject to "the rot." Any undulating surface, if dry, is preferable to a level one.

The soil best suited for a vineyard, is a dry calcareous loam—with a porous subsoil—not retentive of moisture; if mixed with some gravel or small stones, so much the better. Some prefer a sandy soil with a gravelly substratum; as in this the grapes are less subject to rot; the juice, however, is not so rich,—lacking in saccharine matter,—and in dry seasons the vines will suffer from the drought, shedding their leaves prematurely, and preventing the grapes from ripening well. In warm, sandy soils, the fruit-buds on the vines, if swelled prematurely in autumn, are sometimes killed by the frosts of a severe winter.

Any soil underlaid by a stiff wet clay, is to be avoided, as also wet or spongy lands. No tree should be allowed to grow within one hundred feet of the vineyard.

PREPARING THE GROUND.

In autumn or early winter, dig or trench the ground all over, 2 to 2½ feet deep, with the spade—this is far better than plowing—turn the top soil under; the surface will be mellowed by the frosts of winter.

Wet spots in the vineyard may be drained by small stone culverts, or what is termed a French drain, a ditch, with some loose stones thrown into it edge-wise, covered with flat ones, and filled up with the earth again. Surface draining may be obtained by *concave sodded* avenues of 10 feet wide, and intersecting each other at 100 or 120 feet, thus throwing the vineyard into squares of that size. This will do for gentle declivities; but steep ones must be terraced, or benched with sod or stone, which is more expensive. These benches should be as broad as they can be made conveniently, and with a slight inclination to the hill, that they may be drained by stone or wooden gutters, running into the main trunks, to carry off the water without washing away the soil. This is important, and requires good judgment and skill.

PLANTING.

Much diversity of opinion exists, as to the proper distance of planting the vines apart in the rows.—Our native varieties, with their long joints, large foliage, and luxuriant growth, certainly require more room to grow than the short jointed vines of the Rhine. Hence it is supposed, that our German vine-dressers have sometimes erred, in planting too close in this country,—3½ by 4; 4 by 4; 4 by 4½, &c. For steep hill sides, 3½ by 4½, or 3 by 5 may answer, but for gentle slopes 3½ by 6 is close enough, and for level land, 4 by 7. This will admit sun and air to mature the fruit, and leave a liberal space for the roots to grow.

Lay off the vineyard carefully with a line, and put down a stick some 15 inches long, where each vine is to grow. Dig a hole about a foot deep, and plant two cuttings to each stick, in a slanting position, separated 6 or 8 inches at the bottom, and 1 inch at the top of the hole; throw in a shovel full of rich vegetable mould, from the woods, to make the roots strike freely; let the top eye of the cuttings be even with the surface of the ground, and cover with half an inch of light mould, if the weather is dry.—Leave the hole at the lower part about two-thirds full, until midsummer; then fill up.

If both the cuttings grow, take up one of them the following spring, or cut it off under ground, as but one vine should be left to each stake.

To prepare the cuttings for planting, bury them in the earth when pruned from the vines, and by the latter end of March, or early in April, which is the right time for planting, the buds will be so swelled, as to make them strike root with great certainty.

Each cutting should contain at least four joints, and be taken from wood well ripened; if a small part of the old wood is left on the lower end, so much the better; cut them off close below the lower joint, and about an inch above the upper. Set out some extra cuttings in a nursery to replace failures in the vineyard.

Some good vine-dressers have recommended planting with roots one or two years old, but the experience of others is in favor of planting at once with cuttings in the vineyard; the vine being never disturbed by removal makes the more thrifty and permanent plant.

Of course the planting should only be made when the ground is warm and dry, or mellow.

Persons residing at a distance from vineyards, had better procure roots one year old, as the cuttings are apt to suffer from transportation.

DIRECTIONS FOR PLANTING CUTTINGS IN A NURSERY.

When pruned from the vines, the cuttings should be tied in bundles of 100 or 200, and placed in a cool cellar, until the ground is prepared for planting.

Dig a trench, in spaded ground, about a foot deep, slanting to the surface, the length of the cuttings. Place the cuttings 5 or 6 inches apart, the top eye just above ground. Cover the lower joints with good rich mould, and fill up with the earth thrown from the trench. Keep them clear of weeds in the summer, and in dry weather water occasionally.

TREATMENT OF THE YOUNG VINEYARD.

The first year, keep the ground clean and free from weeds, with the hoe; many use the plow, as being more expeditious and economical, but the more careful vine-dressers who can afford it, never cultivate with the plow, using only the two pronged German hoe, made especially for the purpose.

The earth should be stirred around the young vines, two or three times during the season, to promote their growth; superfluous shoots must be pulled off, leaving but one or two to grow, at first, and but one eventually.

In the spring, cut the young vine down to a single eye, or bud; at first, if two are left for greater safety, take off one, afterward; drive a stake six or seven feet long firmly to each plant. Locust or cedar is preferred, but oak or black walnut, charred at the end, driven into the earth, or coated with coal tar, will, it is said, last nearly as long. Keep the young vine tied neatly to the stake with rye or wheat straw—pick off all suckers, and let but one stalk or cane grow. The vineyard must be kept clean of weeds, and the young vines hoed as before.

The second spring after planting, cut down to two or three eyes, or joints, and the third year to four or five; pinching off laterals, tying up, and hoeing the vines as recommended above. Replant from the nursery, where the cuttings have failed to strike root in the vineyard.

The third year, the vines will produce a few grapes, sometimes enough to pay the expenses of attending them. Train two canes to the stake this year, take off laterals, and keep well hoed.

The vineyard having now commenced to bear,

may be considered as *fairly established*; and for the fourth and successive years, the following treatment is generally adopted.

SPRING PRUNING.

This is usually done from the middle of February to the first week in March. Some prune in January, and Mr. SCHUMAN has recommended November and December, as the proper time. No serious injury to the vines, by winter pruning, has yet been discovered. The writer pruned many of his vines in November and December, last year, and they escaped unscathed through the hardest winter known in this climate for many years.

Pruning, the fourth year, requires good judgment, as the *standard stem*, or *stalk*, has to be established.

Select the best shoots or cane of last year, and cut it down to six or eight joints, and fasten it to the adjoining stake in a horizontal position, or bend it over in the form of a hoop or bow, and tie to its own stake. The ties should be of willow. This is the bearing wood. The other cane, cut down to a spur of two or three eyes, to make bearing wood for the next season.

SUMMER PRUNING.

Consists in removing suckers, and *pinching* off all lateral shoots, leaving but two stalks or canes to be trained for bearing wood the ensuing year, and *pinching* off the ends of the bearing branches, about the time of blossoming, some two or three joints beyond, or above the last blossom bunch; pull no leaves off the bearing branches, and but very few from any other. As the vines grow, tie them neatly to the stakes, with rye straw, (some use grass,) and when they reach the top, train them from one stake to the other, until the fruit has nearly matured; the green ends may then be broken off. If this is done too early, there is danger of forcing out the fruit-bearing buds for the next year, and of injuring the grapes in ripening.

Some of our cultivators are averse to removing any lateral branches from the fruit-bearing wood, —merely pinching off their ends. Others adopt close pruning, in summer, and even taking off some of the leaves of the bearing branches. Both these extremes are wrong. The experience of the writer is in favor of removing such lateral shoots as appear unnecessary to the growth or ripening of the fruit—to pinch off the ends of the bearing branches two, three, or four joints beyond the upper bunch of grapes—according to the number it bears—to take off all laterals from the bearing wood intended for the ensuing year; and not to break off the ends of these branches at all (as has heretofore been done about the time the grapes began to color.) The leaves are the *lungs* of the plant, and while it is necessary to remove suckers and laterals, to throw

strength into the *fruit* and the *bearing branches* for *next year*, a liberal supply of leaves should be left for the maturity of both.

CULTURE.

The vineyard must be kept perfectly clean from weeds and grass, and should be hoed twice during the spring and summer. From the middle of April to the first week in May, is recommended as the best time for spring-hoeing, and August for summer.

The cultivator or the plow is less expensive, but the vines and roots are in danger of being injured by that mode of culture; therefore the hoe is preferred by those who can afford it. It has been recommended by some writers, to cut off the roots of the vines near the *surface* of the ground, and for four or five inches under, that the roots, when the vines are young, may be well established at a proper depth below.

By others, this plan is thought to be injurious.—The majority, however, prefer cutting off the surface roots for the first three or four years.

About every third year, put in manure, by opening a trench the width of a spade, and four or five inches deep. Above and near each row, throw in two or three inches of well-rotted manure, and cover up with the earth.

FLOWERS.—Flowers, of all created things, are the most innocently simple, and most superbly complex—playthings for childhood, ornaments of the grave, and companions of the cold corpse! Flowers, beloved by the wandering idiot, and studied by the deep thinking man of science! Flowers, that unceasingly expand to Heaven their grateful, and to man their cheerful looks—partners of human joy; soothers of human sorrow; fit emblems of the victor's triumphs, of the young bride's blushes; welcome to the crowded halls, and graceful upon solitary graves! Flowers are in the volume of nature, what the expression "God is love" is in the revelation. What a desolate place would be a world without a flower! It would be a face without a smile—a feast without a welcome. Are not flowers the stars of the earth? and are not our stars the flowers of Heaven? One cannot look closely at the structure of a flower, without loving it. They are the emblems and manifestations of man's love to his fellow creatures: for they first awaken in his mind a sense of the beautiful and good. The very inutility of flowers is their excellence and beauty, detached from, and superior to selfishness: so that they are pretty lessons in nature's book of instruction, teaching man that he liveth not by bread alone, but that he hath another than animal life.

The whole specie export for the last year, including California, is stated at \$90,000,000, of which \$50,000,000, has been from New York.

Horticultural.

THE LAWTON BLACKBERRY.



The above cut represents, in point of size and in the general appearance of the fruit, the famous Lawton Blackberry, which is now very generally regarded by our horticulturists, as a distinct but very rare and precious variety of the native berry.—Many wild fruits which are improved in size and flavour by the skillful cultivator, speedily degenerate into their old habits in the hands of those who are not properly acquainted, or have neither the time or patience to cultivate them properly. But a native variety, such as the Lawton Blackberry, will always maintain its original size and flavour under ordinarily good management. It requires for its fullest development, a rich, deep, sandy loam, which is moderately and uniformly damp, rather than moist; and throughout the season, the soil around the canes should be kept light and free of grass and weeds. In planting, the same method is to be followed as in setting out a Raspberry plantation, and early each succeeding spring, the ground should be well stirred, and the main and side shoots shortened into at least a third of the growth of the previous year.

COFFEE AND TEA CULTURE IN CALIFORNIA.—The cultivation of coffee and tea promises to become an important business in California. One nursery at Sacramento has five thousand coffee plants on trial, and it is believed that there will be no difficulty in bringing up the plant to a standard of hardiness to weather the mild winter of that climate. Near the Mission Doleres several thousand tea-plants have been raised during the last year.

HOW TO FORM A LAWN.

The walks being constructed, before the surface coat of gravel is added, the ground intended for the lawn must be leveled, dug over, or trenched, so as to secure a good free soil for the germination of the grass seeds and their future support. The most suitable soil for this, as well as for a flower garden generally, is a friable loam, rather tending to sand than clay. While a clay loam is desirable for heavy cropping, and would consequently be the most suitable for the kitchen garden, the sandy loam is to be preferred for lighter purposes, as it is more easily worked, and encourages the growth of the roots of plants more speedily; it is also of a warmer nature than clay, not retentive of water, nor so liable to bake on the surface. Its disadvantages, on the other hand, are, that in very dry seasons it becomes too dry; and while plants in clay soils well cultivated suffer comparatively little from drouth, those on very sandy soil will be parched. This can be obviated, or at least modified, by the application of vegetable mold or other absorbing materials as manure or as top dressing, technically styled *mulching*, a very important aid to all trees and plants in a dry season. Should the soil of the lawn be decidedly deficient in any of the essential components, they should be supplied, if you intend to secure a neat and smooth lawn, clothed with soft and tender herbage. It has been duly observed that in cases where the soil composing the lawn was sour, made up of rubbish of all kinds without any precaution as to its texture or composition, the coarse and spontaneous grasses flourished so rapidly as to entirely choke up and overshadow the tender sorts sown with care. After deep digging, the ground should be pointed over with the spade, that is, lightly dug so as to reduce the lumps and level the surface. It should then be raked and rolled so as to compress or consolidate it, taken care to secure an even surface, free from depressions. The whole must be finally raked to prepare it for the seed. These operations may be performed at two seasons of the year, but we should much prefer the autumn for various reasons. When the spring opens, so little time is afforded for the work of that season, that any operations which can be performed in the autumn should be dispatched. Laying down to grass is one of these, and this when done in the latter part of September or in the first two weeks of October, succeeds better and is more satisfactory than when left till spring. The grass seeds germinate freely in the warm soil, and have, if properly treated, sufficient time to attain a growth to stand the winter; so that when the spring opens your grass will be established.—Some persons, whose lots are not very large, prefer using turf for the whole surface; if that can be con-

veniently obtained in the vicinity, advantage should be taken of it, as it forms at once a fine sward, provided it is from a close pasture field which has not been cultivated.

The kind of seed to be selected is a matter of some importance. The practice has been to use several varieties in mixture, while many prefer some particular variety. The *Red Top* (*Agrostis rubra*) has succeeded better than any other sort by itself. It has been now fairly tested. *Perennial Rye-grass* has been strongly recommended by several writers and a few practical men. This if at all neglected forms a coarse, tufted surface, and on uneven ground is not at all desirable. *White Clover* is a favorite with many, as it spreads rapidly, and is of very low growth. It has a tendency, however, to choke the other grasses, and is by some regarded as injurious. There are many soils which are not suited to it, while *Red-Top* will grow on almost any cultivated ground. *Sweet Vernal Grass* is very desirable in a mixture, as it is a grass of fine foliage and dwarf habit, while it is a favorite on account of its proverbial fragrance when cut. *Green Grass* is another variety popular in some districts; it is one of the meadow grasses styled *Poas* by botanists, and is a good sort for some localities. In shady situations the *Orchard Grass* succeeds while the more delicate varieties fail. It is, however, a coarse grass, and not to be recommended except for special locations. On the whole we would recommend *Red Top* as preferable when only one sort is used. Those who would rather try several varieties, should use one-half *Red Top*, one-eighth *Sweet Vernal*, and three-eighths *Green Grass* (*Poa pratensis*). When *White Clover* is used, it should be sown by itself before the other seeds. The quantity of seed required for an acre varies from two to three bushels, according to the fertility of the soil; with white clover two bushels is quite sufficient, allowing one bushel of the clover, or one-third of the whole. For smaller portions, a suitable proportion may be computed from the above.

Care must be taken to sow equally and in calm weather, so as to provide against the waste of the seed. The surface must be carefully raked over to cover the seeds lightly, not as you would rake a gravel walk, but just lightly, to turn over the soils on the seeds. A roller should then be passed over to consolidate the whole. To encourage the growth of lawn grass, a light top dressing of compost prepared from bone dust and charred refuse, or guano mixed with light loam in about equal parts, sown over the ground in the proportion of about four bushels to the acre, will much promote the luxuriance of the grass. This must be applied in the spring, when vegetation commences, and before rain if possible. Liquid manure is still more efficacious, but not so easily obtained or applied. Frequent

mowing is perhaps the most promotive of the luxuriance of the lawn; at least as frequent as the growth demands, which will depend, of course, on the state of the weather; a few inches is a sufficient height for any lawn grass to attain. After mowing it is important to clear off the cut grass effectually.—Lawn rakes are manufactured for this purpose. A little care is required at first in using them, but in practiced hands they are effectual.

We have said all we think necessary here on the arrangement of the lawn. The importance of this portion of the ground to the general beauty of the place is well known; and when satisfactorily completed, will prove a sufficient recompense for all the care and labor expended on it.

The flower beds or figures may remain unfinished till the spring, when the surface will be better prepared for their being cut out. There may be a great deal of taste displayed in this portion of the work on an extensive place. Where the extent is limited, neat beds cut a few feet from the walk around the lawn will look better than any geometrical plan could do if on a small scale. In establishments where a skillful gardener is employed, he of course will exercise his taste and vary the arrangement to suit his own ideas. Were it possible for an unpracticed person to arrange his garden satisfactorily, construct walks, lay out beds, &c., from hints conveyed in this, or even with the aid of plans, we might deem it necessary to furnish such in this place; but convinced that when the ground exceeds an acre in extent some professional aid must be resorted to, if a neatly planned garden is aimed at, we have not entered largely into the subject of forming the flower beds.—*Rural Annual* for 1856.

The Time for Cutting Grass.

The following is an extract from a letter of one of our correspondents:—

“This is a most important question and we believe has never been fully settled, if we may judge from the practice of farmers. Grass is cut in all stages of its growth, and in some cases with great wastefulness. There is a golden mean which should always be observed—it should never be cut too early nor too late—if too early it lacks substance, and instead of sustaining stock and making them healthy and hardy, it will scour and deplete them.—If cut too late, the seed will shell out and waste, and much of the nutriment is lost. It is better to cut grass a little late than too early, but the true rule is, to cut it when the seed are nearly all ripe and then stock fed upon it, will thrive and be hardy. The half ripened seed furnish a great deal of healthy nutriment, which is lost when grass is cut at any other time.

SOWING CLOVER.

Clover seeds are rarely sown with autumn crops in this country; the severity of the winter, except in favored situations, destroying the young plant. The better way is, to sow it with spring crops, such as oats, barley, or spring wheat, or on winter wheat, as early as the spring will admit. When sown in the spring on winter wheat, its germination is greatly facilitated by going over the field after the seed is sown, with a light harrow or roller. There need be no fear that the wheat will be injured from this process. Spring harrowing wheat is extensively practiced in Germany, and is found of decided benefit. Sandy soils, when to be sown with clover, should have deep plowing, so that the young roots may by penetrating to a good depth escape the danger of a drouth.

The quantity of seed sown varies much in different countries, and the purpose to which the crop is to be applied. In Belgium, the usual quantity is six lbs. to the acre, but the soil is in such fine tilth, that almost every seed germinates. In this country, from five to ten lbs. are used, but owing to our imperfect culture, it is found that the quantity of seed is too small, more frequently than it is too large. The English use more seed than most other people, allowing from ten to sixteen lbs. the average perhaps thirteen or fourteen. An annual top dressing of plaster, lime, or ashes, plaster being best, given in the spring of the year, is all that clover requires. Where lands are intended for permanent meadows, or pasture, other grass seed, such as red top, timothy, orchard grass, meadow fox tail, white clover, &c. &c. in order to ensure a proper supply of roots and herbage, should be mixed with the clover seed. One of the best selections for sandy lands, is red and white clovers, with the tall oat and orchard grasses. It is in a course of rotation with wheat, however, that the good qualities of clover are most conspicuous. For this purpose, no other seeds than the red clover should be sown, and this, plastered and fed off upon the ground by sheep, is one of the most ameliorating crops cultivated.

THE IMPORTANCE OF PAYING THE POSTAGE IN FULL. The law is, when anything is put into the postoffice *underpaid*, the sum which remains due shall be paid *double* by the receiver. Thus, if John Smith send Jim Jones a letter rated at 6 cents, but pays 3 cents only, it is not kept back like an unpaid letter, but Jim Jones at the end has 6 cents to pay. And so of all packages through the mail. This extra charge of 33 per cent. we suppose is to make people more careful to know that they pay enough, and to compensate for extra troubles and risk. Letters are 3 cents per half ounce—6 cents per ounce—and so on, each fraction over $\frac{1}{2}$ ounce or 1 ounce counting 3 cents. This applies to all mailable matter, sealed or unsealed, except newspapers, which rate at 2 cents for each four ounces, and books and pamphlets, which rate at 4 cents each four ounces.

Ladies Department.

THE WINTERS.

BY FRANCES BROWN.

We did not fear them once—the dull gray mornings
No cheerless burden on our spirits laid;
The long night watches did not bring us warnings
That we were tenants of a house decayed;
The early snows like dreams to us descended;
The frost did fairy work on pave and bough;
Beauty, and power, and wonder have not ended—
How is it that we fear the winters now?

Their house-fires fall as bright on hearth and chambers;
Their northern starlight shines as coldly clear;
The woods still keep their holly for December;
The world a welcome yet for the new year.
And far away in old remembered places
The snow-drop rises and the robin sings;
The sun and moon look out with loving faces—
Why have our days forgot such goodly things?

Is it now the north wind finds us shaken
By tempests fiercer than its bitter blast,
Which fair beliefs and friendships, too, have taken
Away like summer foliage as they passed,
And made life leafless in its pleasant valleys,
Waning the light of promise from our day,
Fell mists meet even in the inward palace—
A dimness not like theirs to pass away.

It was not thus when dreams of love and laurels
Gave sunlight to the winters of our youth,
Before its hopes had fallen in fortune's quarrels,
Or time had bowed them with its heavy truth—
Ere yet the twilights found us strange and lonely,
With shadows coming when the fires burn low,
To tell of distant graves and losses only—
The past than cannot change and will not go.

Alas! dear friends, the winter is within us,
Hard is the ice that grows about the heart;
For petty cares and vain regrets have won us
From life's true heritage and better part.
Seasons and skies rejoice, yea, worship rather;
But nations toil and tremble even as we,
Hoping for harvests they will never gather,
Fearing the winter which they may not see.

I Will be Good To-day.

"I will be good, dear mother,"
I heard a sweet child say;
"I will be good—now watch me!
I will be good all day."
She lifted up her bright young eyes,
With a soft and pleasing smile;
Then a mother's kiss was on her lips,
So free and pure from guile.
And when night came, that little one,
In kneeling down to pray,
Said, in a soft and whispering tone,
"Have I been good to-day."
O many, many bitter tears,
'Twould save us, did we say
Like that dear child, with earnest hearts,
"I will be good to-day."

THE BIRTH OF THE SNOW-DROP.

Far away among the vine clad hills of sunny France, there lived a poor woman with her only child. She was a soldier's widow and gained a scanty subsistence by working in the vineyard.— Little Renie was only able to follow his mother in her labours; but he loved to sit under the vines, and see the rich purple clusters of grapes that hung among the green leaves like bunches of amethysts.

The widow dearly loved her little son, and often seating him upon her knee after the labours of the day was over, she told him of his father; how he was a good man and a brave soldier who had died fighting for his country; and then she would sob and press the child to her bosom, as she related how handsome the soldiers looked marching on to the sound of fife and drum, and how not one of that gallant band ever returned again.

Renie was much too young to understand all this; but as he grew older he learned that his mother had left her home with a young soldier, and that her father never forgave the marriage, or saw his daughter again. The old man was living still in a distant province; but though the heart of the lonely widow yearned for home, and with a mother's pride she longed to show her boy, yet she knew the stern nature of her father, and dared not seek to plead again for the pardon so often denied.

At last the poor widow fell ill, and though it was the season when the rich hue of the grapes deepened into perfection beneath the warm sunbeams, she knew full well that she should not live to gather them.

The dying mother bade little Renie come very near to her, and then, in faltering tones, whispered that she must leave him, and perform a long dark journey alone. But the child, with violent sobs of grief, clasped his arms about his mother's neck, praying to go with her, and not to be left behind.

Then the widow, whose strength was failing fast, comforted her child murmuring, "I will not leave you for ever, my son; we shall meet again—in my Father's house." She spoke no more,—and soon poor little Renie was an orphan.

The peasants made the poor widow a grave in a quiet spot, and gave the little boy a home among themselves; but day after day he threw himself upon his mother's grave and wept, refusing to be consoled. Children gathered about and pressed him to join their sports, kind women drew him to their bosoms and promised to cherish him, strong hearted men raised him up and bade him be of good cheer;—but Renie turned from them all to the cold, damp sod, exclaiming, "She will not leave me for ever; my mother will come back. I will wait for her here."

When they saw all their comforting words were of no avail, they left him trusting that the natural joyousness of childhood would overcome his grief; but when weeks passed on and brought no change, they learned to respect the child's sorrow, and the grape-gatherers as they returned from the vineyards with baskets of the beautiful fruit, paused in their vintage song as they saw little Renie with his arms clasped about the wooden cross upon his mother's grave.

The leaves at length dropped dry and sere, and the snow rested upon the hills; then Renie himself fell ill, and for many weeks he could not rise from the little cot where a kind peasant and his wife nursed him tenderly; but during the tedious hours of illness his mother's image was ever before him; and remembering her words, "We shall meet in my Father's house," he resolved, when he grew strong again, to go and seek her, as she did not return to him.

The snow had not yet melted in the valleys, though the sun was shining warmly, when Renie feebly turned his steps once more toward the spot where his mother slept. He knelt down before the little cross and his warm tears fell fast upon the snow, when lo! just where the tears had fallen, appeared a tiny blade struggling to pierce the crusted ground the boy tenderly scraped aside the snow that the little plant might feel the sun, and another warm shower of tears fell upon it as he did so, for he remembered his lost mother's love for the flowers.

When Renie came again to the grave, he saw with surprise a group of lovely white blossoms that seemed to bend sorrowfully over the sod. The child knelt beside them, and a strange feeling of peace crept into his heart.

"My mother has sent them from the land where she dwells," he thought, "to show that she has not forgotten me;" and a smile of hope beamed on his sad, pale face, as he looked fondly on the flowers.

But when the peasant beheld this mysterious little plant blossoming in the midst of the snow, and of a kind they had never seen before, they were filled with astonishment and awe.

"It is sent from the spirit land," they whispered, "and born of Renie's tears; see how each snow-white drop quivers upon its stem like a tear about to fall; his mother knows his sorrow and would console him thus."

Gradually the grief of the little boy became more subdued, and hope and cheerfulness beamed upon his face once more; he loved to water and nurture the tender blossoms, and soon the grass was covered with the delicate and grateful flowers, gently bending towards the earth.

The good cure, who dwelt among these simple peasants, loved the little motherless boy, and spoke

often to him, explaining how the child must one day join his mother, but she could come no more to him. Renie listened to the good old man with interest; still the words of his mother seemed ever present with him.

"We shall meet in my Father's house!"

And so one day the boy filled a basket with tufts of the spirit flowers, as the peasants called them, and going to the cure, said firmly,

"My mother has sent me many messengers. See, I take some with me to show the way, and I go to seek her in her Father's house, where she told me we should meet again."

Then the good cure drew little Renie towards him and told him of that heavenly Father's house where his mother awaited his coming; and as he dwelt upon the love and goodness of that all-wise Parent, and the eternal happiness prepared for his children, the boy was comforted, and dared not wish his mother back to the home of that earthly father who had cast her off.

As the kind teacher went on and spoke of the loneliness, and perhaps the remorse, of the old man, who had refused to forgive his child, little Renie's heart swelled with tears, and as a sense of peace filled his own bosom, he longed to impart it to others. Suddenly he looked up with a brightened countenance.

"I will seek my grandfather," he said, "and carry these sweet flowers to him; they are messengers sent to console us both; and when I tell him my mother is gone home to her heavenly Father's house, he will not be angry with her any more, but will love me for her sake."

The good Cure blessed the little boy;—the peasants gathered around with gifts and many kind wishes; and then Renie, after a last visit to his mother's grave, started on his journey, carrying with him the precious flowers.

He met with much kindness on his way; for all who listened to his simple story willingly aided the little orphan boy. Many wished to purchase the strange and beautiful blossoms which he carried, but Renie would not sell them; he regarded them with a love too holy to barter them for money. But whoever did him a kindness was rewarded by a little tuft; and if he met any one in sorrow he offered his simply tribute, strong in the faith of its power to soothe.

The twilight was fast fading into night when Renie entered a shaded lane, and softly opening a wicket gate, carried his treasured flowers to the well to water them, ere he sought a shelter for the night. The little garden into which he had entered was overgrown with weeds, and the low-roofed cottage wore an air of desolation. In the porch sat an old man, who with thin, silvery hair floating on his shoulders, leaned heavily upon a staff, and with

mournful voice and shaking head constantly murmured to himself,

"My child, my child! I have driven you from me, and now am broken-hearted. I shall never see you more—my child, my child!"

Little Renie heard these words; a gleam of joy illumed his heart; lifting his basket of flowers he stood before the old man, saying as he offered them,

"Grandfather, see, I bring you consolation!"

The poor old man was for a time bewildered; but when he had heard Renie's story and read the letter of the good Cure, he clasped the child in his arms and shed over him tears of mingled penitent sorrow and gratitude.

The weeds were uprooted, and the precious flowers planted in the garden, where they grew and flourished in luxuriant beauty. When Renie with his grandfather went to visit his mother's grave, tufts of the lovely blossoms met them at every turn, like the foot-prints of angels leading them on, and each one to whom Renie had given the flowers came out to welcome them as they passed.

When the next spring-time came, the hills were covered with the delicate blossoms, and for many years the peasants named them, "Renie's consolation."

IMPORTANT REQUISITES IN A WIFE.

A knowledge of domestic duties is beyond all price to a woman. Every one of the sex ought to know how to sew, and knit, and mend, and cook, and superintend a household. In every situation of life, high or low, this sort of knowledge is of great advantage. There is no necessity that the gaining of such information should interfere with intellectual acquirement or even elegant accomplishment. A well-regulated mind can find time to attend to all. When a girl is nine or ten years old, she should be accustomed to take some regular share in household duties, and to feel responsible for the manner in which her part is performed—such as her own mending, washing the cups and putting them in place, cleaning silver, or dusting and arranging the parlour. This should not be done occasionally, and neglected whenever she finds it convenient—she should consider it her department. When older than twelve, girls should begin to take turns in superintending the household; making puddings, pies, cakes, &c. To learn effectually, they should actually do these things themselves, and not stand by and see others do them. Many a husband has been ruined for want of these domestic qualities in a wife—and many a husband has been saved from ruin by his wife being able to manage well the household concerns.

Hail stones sometimes fall with a velocity of 113 feet in a second, and rain at 43 feet in a second.

The Florist.

FLORICULTURE—February, 1864.

Communicated for the "Farmer and Mechanic," by W. D. BRACKENRIDGE, Florist and Nurseryman, Govanstown, Baltimore County, Md.

The weather having been unusually cold during the past month, plants must have suffered much from the heavy fires required to keep out the frost, causing them to present to the eye, a sickly, blanched appearance, and forcing many of the leaves to drop off; under such circumstances, care should be taken, not to over-water at the root, but the floor of the house ought to be kept moist, and on such days as the sun is likely to make its appearance, the plants can be syringed overhead with soft temperate water, observing to give a gentle breathing of air, should the thermometer rise above 60°, and in order that the plants may have a clean, neat appearance, all dead leaves should be picked off, and such as require it, be tied up to stakes, observing also—with a scrubbing brush and water, to remove the green scum which collects on the sides of the pots, as well as stir up and top-dress the surface of the earth; all these things, however trifling they may seem, are essential to the health of the plants, nevertheless that the collection may be small and composed of the most common kinds.

Camellias will now be opening their buds freely; during this period—and when in full flower, also when they are making their young wood, water should be given them freely at the roots, observing to afford a partial shade, from the direct rays of the sun. *Azaleas* that are coming into bloom, can have more water at the roots, as well as be moderately syringed over-head; all such plants as are wanted for late flowers, should be kept in a somewhat dry cool place, and if the *black thrip* insect make its appearance, fumigate with tobacco, which will destroy it—as well as that other pest, the *green fly*. *Pelargoniums* will be growing freely, keep tying them into shape, and turn the plants round every ten days or so, in order that the specimens may not become lop-sided; repot such young plants as want it, after this, water but moderately until such times as they have taken good hold of the new earth. (See last month's directions for the compost that suits them.) *Monthly Carnations*, now in a growing state—and shewing their flower stems, should be neatly tied to stakes, and some may require larger pots, but the shift should be a moderate one; the compost that suits them is well rotted leaves, loam and sand, in about equal parts.

Put in cuttings yet, of such bedding out plants, as *Scarlet Geraniums*, *Heliotropes*, *Verbenas*, *Petu-*

nias, *Lantanas*, and *Eupatoriums*, these, if placed on a gentle bottom heat, will root in the course of two weeks, and if well taken care of, will make fine plants for next summer. *Fuchsias* that are young and growing, should never be permitted to become pot-bound, but keep shifting into larger pots until such times as the plants shew flower, when, in place of shifting, they should receive frequent supplies of liquid manure; the old plants of last year—now in in a dormant state—should be pruned pretty close, repotted and placed in a warm part of the house.

Sow seeds of *Phlox Drummondii*, *Sweet Alyssum*, with a little *Mignonette* for early blooms; and observe to prick out into seed pans or boxes, the young *Verbenas*, *Petunias* and *Pansies*, the produce of the seed sown last month, keeping the young plants near the glass, until such times as they can be removed to the cold frame. *Acacia* and other New Holland seeds, ought now to be sown in pots, in a mixture of woods, earth and sand, and kept in the warmest part of the greenhouse; also *Rhododendron* and *Azalea* seeds can now be sown in boxes that are well drained; after sowing, observe never to allow the surface of the soil to become perfectly dry. Repot a few more *Achimenes* and *Gloxinia* roots, as a succession, also bring in a few more *Roses* from the cold frame, and *Hyacinths* from the cellar, these with the *Violets* taken in last month, afford much gratification, both to the sight and smell of most individuals.

Prepare for getting up hot beds towards the end of the month, by collecting fresh manure into a heap, and so soon as it begins to heat, turn it over, observing to shake it well up with the fork, and in a few days after, it can be made up in a square level compact form, about 1 foot to 15 inches wider than the size of your frame, and 2 to 3 feet in height, cover the surface of this bed with a layer of about 6 inches thick of sandy earth, put on the sash, and protect with mats, giving a little air during the day, to let the rank steam escape, and in a few days more it will be ready for use; in this frame you can sow *Cock's-Comb*, *Globe Amaranths*, and other seeds; it is a good place to strike cuttings in, and serves as an excellent hospital for such plants as may have become sick from bad treatment in the house during the winter.

TAKE the stalks of cabbage, scrape them, leave them in water all night, and the next day cook them like vegetable marrow, and they will be found delicious. A cheap delicacy, truly.

THE application of castor oil to new boots renders them as soft as a buckskin glove. It is also the best application that can be made to render a new boot waterproof.

A DELICIOUS PERFUME.—By collecting the leaves of roses, wall flowers, lavender, sweet brier, &c., and packing them with layers of salt, in a tight covered jar, or other suitable vessel, sprinkling with each layer a little powder of cloves and cinnamon, in equal parts, may acquire a delightful and refreshing perfume, which will last for years, with very little waste, which waste may be supplied, by adding fresh leaves, on the return of the following season. Nothing on earth can more regale the senses, than a beautiful display of roses, and other ornamental flowers. But this has been hitherto considered as a luxury which could only be enjoyed by the rich, who wholly disregard profit. But if the most brilliant productions of Flora's kingdom can be rendered equally an object of profit and of pleasure, who would not have a flower garden? Every family, almost, can be furnished with a cheap apparatus for distilling, and may thus render pleasure and profit mutual auxiliaries to each other.

A SISTER'S VALUE.

Have you a sister? Then love and cherish her with all that pure and holy friendship which renders a brother so worthy and noble. Learn to appreciate her sweet influence as portrayed in the following words:

"He who has never known a sister's kind administration, nor felt his heart warming beneath her endearing smile and love-beaming eye, has been unfortunate indeed. It is not to be wondered at if the fountains of pure feeling flow in his bosom but sluggishly, or if the gentle emotions of his nature be lost in the sterner attributes of mankind.

"That man has grown up among affectionate sisters,' I once heard a lady of much observation and experience remark.

"And why do you think so?" said I.

"Because of the rich development of all the tender feelings of the heart."

"A sister's influence is felt even in manhood's riper years; and the heart of him who has grown cold in chilly contact with the world will warm and thrill with pure enjoyment as some accident awakens within the soft tones, the glad melodies of his sister's voice; and he will turn from purposes which a warped and false philosophy had reasoned into expediency, and even weep for the gentle influences which moved him in his earlier years."

TREATMENT OF CAST IRON.—R. Mushet, of Coleford, England, has taken out a patent for mixing and combining with pig iron, intended for castings, a quantity of semi-steel or malleable iron, obtained by the pneumatic (Bessemer) process, for the purpose of improving the quality of castings, to render them superior for making articles such as shafts, guns, &c. designed to withstand great strains.

THE TRADE OF BALTIMORE.

The Commercial press has presented a statement of the business of our city for the past year, ending December 31, 1863, from which we make an abstract of such matters as may be deemed of particular interest to our agricultural readers. From *The Baltimore Price Current*, an old established commercial journal, and one of the best and most reliable in the country, we give a condensed statement as follows:—

In some branches of trade there has been an increase.—The receipts of Flour and Wheat are in excess of last year. Our foreign imports have fallen off, and the exports also, though the inflation of the currency makes a valuation near that of several former years. Business generally, however, presents a better appearance than for any previous year during the war, and with our great lines of western communication open, have a reasonable hope that the new year will still prove more prosperous to all interests than the one just closed.

The *Baltimore and Ohio Railroad*, though for nearly one-half of the year interrupted by depredations of the Confederates, brought to this city among other items, 489,390 bbls. flour, 19,358 bbls. whiskey, 3,869 bales cotton, 1,369 do. wool, 241 do. hemp, 7,428 hhds. tobacco, 28,000 tons grain, seed, &c., 9,160 tons pork and bacon, 15,000 tons iron ores, &c., 432,683 tons coal.

Coffee.

The imports from Rio into the United States for the year 1863 were 360,215 bags, being 71,684 bags less than for the year 1862. The quantity received at this port amounted to 73,957 bags, against 77,775 in 1862, a decrease of 3,718 bags. For consumption there were taken in 1863, 395,215, being a further decrease compared with 1862 of 59,431 bags.—This decrease is altogether attributed to the prevailing high prices.

Cotton.

Trade in this article has been confined to the limited wants of manufacturers in this vicinity. The receipts have come from New York and the West, chiefly from the latter, consisting of 6,154 bales—from New York about 4,000 bales—making the total supply for 1863, 10,154 bales.

Flour.

Inspection returns for the year of all kinds, amount to 1,102,558 barrels, and are in excess of any former year since 1853. The increase, compared with 1862, is 135,226 bbls., and mainly composed of City Mills and Ohio descriptions. Exports, foreign, amount to 328,450 bbls., being a decrease, compared with the previous year, of 33,829 bbls. The home demand has been larger than for any previous year, owing to the heavy requirements for the army—considerable coastwise shipments have also been made to Eastern ports. The number of barrels manufactured by City Mills, for 1863, are 437,638, and present an increase over 1862, of 63,498; over 1861, 129,049 bbls., and over 1860, 147,711 bbls. For a portion of the summer and fall, the receipts of Ohio and Western failed to keep pace with the demand, and stocks of both descriptions were, for a brief period, almost exhausted. The total Rye flour inspected 1863 was 7,400—Corn meal, 40,025.

Grain.

Receipts of all descriptions reported at Corn and Flour Exchange for the year, with the addition of 10 per cent. for lots received by wagons, railroad, &c., not recorded, present in the aggregate 5,722,114 bushels, to which may be added 95,000 bushels of oats from Prince Edward Island, stored on arrival, and 405,000 bushels received by government contractors and forwarded to the army, showing the total receipts here to have been 6,222,114 bushels, against 6,857,194 bushels in 1862; 6,572,723 bushels in 1861, and 7,085,559 bushels in 1860.

Of Wheat, our supplies show very little variation from those of the previous year, being 2,329,058 bushels, against 2,263,312 bushels in 1862. For the first six months of the year, as usual receipts were light, being the end of the old crop; since August, however, they have been large, doubtless accelerated by the high prices prevailing. The Maryland crop of 1863, though understood to be a fair average of previous years in quantity, proves inferior in quality, there being less of prime and choice grades, hence the wide range observable in prices, for both white and red descriptions. To meet this deficiency of good grades, we have had large receipts during the year from Kentucky, and have also at times drawn supplies from Northern markets. Of the receipts, the city millers have taken about two mil-

lion bushels, and the residue three hundred and twenty-nine thousand bushels have been exported coastwise and foreign, less the stock remaining in the hands of millers and dealers at the close of the year.

The Corn crop in Maryland, owing to the drought, was very late maturing, and proved about one-third short. Our aggregate receipts for the year are 2,201,983 bushels against 3,220,189 bushels in 1862—being 1,018,206 bushels less, during a portion of this summer and early fall, our market was so lightly supplied that Western corn was drawn hither from New York; later, with receipts of new crop Maryland, the markets were reversed, and considerable shipments hence have been made to New York and ports further eastward; shipments to foreign ports early in the year were to a very moderate extent, but during the residue of the year amounted to almost nothing.

Of Oats, the quantity received at the Corn and Flour Exchange for the past year, are 71,000 bushels less than for the year 1862; this, however, does not include some eleven cargoes from Prince Edward Island to importers, and stored, and the large amounts from the West and North, direct to contractors for the Army, which, if added to the amount offered at Corn and Flour Exchange, would make an aggregate of 1,603,212 bushels, against 1,274,720 in 1862.

Rye has again been in very light supply, the smallest for a number of years, and with another short crop apprehended, prices for the past three months have materially advanced.

Guan.

Trade in this article continues to languish there being no market for Peruvian, excepted a limited quantity in Maryland, the high cost precluding its general use.

We have had no importation from Peru for two years, and the residue of stock in agents hands amounting to 13,000 tons, was shipped the past summer to Spain, and the agency in this city closed, and will doubtless continue closed, until the end of the war, or until communication is again permanently opened with the South. A limited stock, however, still remains in the market in the hands of a dealer, held nominally at \$95 per ton. The receipts of all other kinds direct and from coastwise ports, only reaching 3,000 tons, against 4,000 tons in 1862, and have been taken principally by the manufacturers of other fertilizers, which are used as a substitute for Peruvian.

Hides.

Importations direct to this port only amount to 30,861 of all other descriptions, form an aggregate for the year of 172,861, being a slight increase compared with 1862.

Provisions.

The crop of Hogs in 1862 being large, with indications of a liberal export demand, a considerable business was done in boxed meats early in the season, for the English market—the latter shipments, however, resulted unfavorable.—The number of boxes exported during the season amounted to 10,038 against 7,692 in 1862. Of all other descriptions of the hog product there was a large decrease as compared with 1862. Lard ruled heavy for most of the year, the quantity exported being 3,567,900 lbs. against 5,773,272 lbs. the previous year.

Butter.

The receipts at this market for the year were composed of 6,331 kegs, 550 barrels, 4,712 tubs, pails, firkins, &c., from the Glades and the West; and from New York State, some 8 to 10,000 packages, which, together with receipts per wagons, from the surrounding country, amount in the aggregate to about three millions pounds; of this quantity 500,000 pounds were exported, and the residue, exclusive of present stock, was taken for home consumption and the use of the army. The receipts of Glades were only 7,000 packages, against 13,000 the previous year.

Cheese.

The supply of Western the past year was fully one-third short, compared with the year 1862, when the receipts amounted to 40,880 boxes, and of Eastern the receipts early in the year were also light, and with a fair demand from the trade, though chiefly from army sutlers, prices have ruled extremely high, being far above any previous year for a long while.

Sugar.

The importations of foreign for the year, are composed of 2,249 hhds., 778 trcs., 6,046 bbls., 12,703 boxes, 25,679 bags, which, in the aggregate, vary but little from the direct imports of 1862; but coastwise, the receipts are very considerably less than those of the preceding year.

Tobacco.

On the 1st of January, 1863, the stock in warehouses and on shipboard, not cleared, amounted to 9,732 hhds., and

there were inspected, during the year 1863, of all kinds, 55,975 hhds., making an aggregate of 65,697 hhds., deducting the shipments, foreign and coastwise, and quantity taken for home manufacture, in all 44,137 hhds., leaving stock in warehouses and on shipboard (400 hhds.) not cleared (Dec. 31st) 21,500 hhds., which consists of 12,000 hhds. Maryland, and 100 to 200 hhds. Ohio and Kentucky, in first hands, and the residue 9,300 are held by speculators, shippers and manufacturers, being composed of 5,431 hhds. Maryland, 3,300 Ohio and 625 Kentucky.

Of Manufactured Tobacco the supplies have been composed almost entirely of Western descriptions, about 20,000 packages of which reached this market direct via Wheeling and Pittsburgh routes, and an equal quantity via New York. This diversion eastward was caused by the Baltimore and Ohio Railroad being closed in the early part of the year, and the more certain transportation offering for New York.

PATENT CLAIMS

ISSUED FROM THE U. S. PATENT OFFICE,
(APPERTAINING TO AGRICULTURE,)

From the 1st December, to 5th January, 1864.

FROM THE SCIENTIFIC AMERICAN.

- 40,803.—Composition for Covering Hams.—Henry A. Amelung, New York City.
- 40,812.—Harvester.—Virgil W. Blanchard, Bridport, Vt.—
- 40,822.—Corn Planter.—Wm. Craig, Urbana, Ill. [This invention relates to a new and improved seed-planting device by which seed may be planted either in drills or hills and in check rows, and the seed-distributing device operated either automatically or by hand, and the seed also properly covered and the earth rolled so that the latter will be firmly compacted over the seed and the clods of earth crushed or pulverized, the device also, by a simple manipulation being capable of having its furrow shares raised out of and free from the earth, as is necessary in turning at the ends of rows, transporting the device from place to place and in rolling land.]
- 40,826.—Hoe.—Josiah Ellis, Pittsburg, Pa.
- 40,840.—Grain Cleaner.—John Hutchison, of Three Rivers, Michigan.
- 40,842.—Potato Digger.—William Jones, St. Louis, Mo.
- 40,859.—Cultivator.—M. H. Skiff, Cornwall Bridge, Conn.
- 40,860.—Hay-elevating Fork.—R. J. Stanley, Mount Morris, N. Y.
- 40,862.—Evaporator for Sorghum Juice.—D. S. Stewart, Wapello, Iowa.
- 40,864.—Harvester.—W. A. Sweet, Syracuse, New York.
- 40,869.—Pruning Hook.—Aaron Travis, Peekskill, N. Y.
- 40,870.—Sugar Evaporating Apparatus.—Erasmus Tucker, Poplar Grove, Ill.
- 40,873.—Plant Protector.—James Weed, Muscatine, Iowa. [This invention relates to an improved means for protecting trees, vines and other plants, against injury from winter and spring frosts, and may be considered as the further carrying out, perfecting or extending of a means which was patented by this inventor on Oct. 21, 1862.]
- 40,876.—Combined Rake and Reel for Harvesters.—W. A. Wood, Hoosick Falls, N. Y.
- 40,883.—Harvester.—William Jones, St. Louis, Mo.
- 40,900.—Corn Planter.—Wm. F. Blandin, Macomb, Ill.
- 40,902.—Gate.—Franklin F. Blood, Janesville, Wis.
- 40,903.—Washing Machine.—I. J. K. Boyce, Napoleon, O.
- 40,909.—Cultivator.—Marcus Milton Clark, Industry, Ill.— [This invention relates to an improvement in that class of cultivators which straddle one row and pass over the growing plants, and the principal object of the improvement is to enable the driver to govern the motion of the cultivator so that the same follows the sinuosities of the rows with care and facility.]
- 40,915.—Cultivator.—John R. Davis, Bloomfield, Iowa. [By means of this invention the plow on both sides may be raised either separately or simultaneously by the feet of the operator, and retained at any desired height.]
- 40,936.—Fruit Ladder.—James Hannan, Lyon, Michigan.
- 40,939.—Hay and Cotton Press.—G. W. Hart, Aurora, Ind.
- 40,934.—Sugar Evaporator.—James High, Walnut Fork, Iowa.
- 40,935.—Cultivator Teeth.—H. T. Hooker, Skeneateles, N. York.
- 40,937.—Fanning Mill.—Henry Kelly and William Franklin, Decorah, Iowa.
- 40,938.—Mill for Crushing Sugar Cane.—G. H. Laub, Macomb, Illinois.
- 40,940.—Stump Extractor.—Hiram Lemm, Leonidas, Mich.
- 40,942.—Grain Cleaner and Separator.—J. W. Patterson, Monticello, Minn. [The object of this invention is to obtain a machine of simple construction which will effectually separate oats from wheat, and also separate smut and all other impurities from the grain.]
- 40,946.—Curry-comb.—J. W. Rockwell, Ridgefield, Conn.
- 40,948.—Fastening for Tobacco Presses or Cases.—C. E. Rymes, Charlestown, Mass.
- 40,959.—Cultivator.—A. J. Sparks, Wyand, Illinois.
- 40,961.—Field Rollers.—U. M. Sunderland, Highgate, Vt.
- 40,971.—Vegetable Cutter.—Amos H. Wellington, Woodstock, Vermont.
- 40,973.—Cultivator.—Erastus Wilcox, Delhi, Iowa.
- 40,979.—Corn Harvester.—Edward J. Eno, Jacksonville, Ill.
- 40,987.—Mill for Grinding Fruit, Grain, &c.—William N. Whiteley, Jerome Fassler and O. S. Kelly, Springfield, O.
- 40,995.—Grain Separator.—J. F. and H. D. Cummings, Fremont, New York.
- 41,000.—Grain Separator.—John Gray, Milwaukee, Wis.
- 41,002.—Grain Binder.—W. D. Harrah, Davenport, Iowa.
- 41,003.—Thrasher.—Thomas Harvey and N. J. Becker, Amsterdam, N. Y.
- 41,009.—Rake for Harvesters.—S. Johnston, Buffalo, N. Y.
- 41,020.—Safety Brake for Horse Power.—David M. Reynolds, Rising Sun, Md.
- 41,023.—Grain Drill.—Jasper Scovil, Hamburg, N. Y.
- 41,032.—Grain Separator.—Joseph Van Houten, Mount Morris, N. Y.
- 41,040.—Harvester.—Stephen Hill, Poughkeepsie, N. Y.
- 41,041.—Grain Separator.—B. S. Heyers, Pekin, Ill.
- 41,046.—Cotton Gin.—Enoch Osgood, New York City.
- 41,055.—Stump Machine.—A. E. Boynton, Hartford, Wis.
- 41,056.—Plow Beam and Handle.—M. C. Brelsford, Girard, Ill.
- 41,058.—Potato Digger.—S. B. Conover, New York city.
- 41,070.—Straw Cutter.—F. B. Hunt, Richmond, Ind.
- 41,071.—Harvester.—T. S. Hunter, of Cross Plains, Ind.
- 41,072.—Horse Hay Fork, T. H. and H. James, Stockport, N. Y.
- 41,080.—Raking Device for Harvester.—C. W. Marsh and W. W. Marsh, Shabbons, Ill.
- 41,086.—Cultivator, J. R. Mills, of Bloomfield, Iowa.
- 41,103.—Grain Thrasher.—D. H. Shearer, Drakesville, Ia.
- 41,106.—Sugar Evaporator.—F. L. Stewart, Murrysburg, Pa.
- 41,120.—Corn Planter.—J. P. Hines, Independence, Iowa.
- 41,123.—Raking Device for Harvesters.—J. Nelson, Rockford, Ill.
- 41,155.—Horse Hay Fork.—J. D. Halstead, Rye, N. Y.
- 41,159.—Cultivator.—George Large, Rosemond, Ill.
- 41,168.—Fruit Box.—A. F. Newell, Warren, Ohio.
- 41,169.—Cheese Press.—Miron Owen, Potsdam, N. Y.
- 41,176.—Corn Planter.—John H. Elward, Ottawa, Ill.

RE-ISSUE.—1,595.—Steam for Actuating Engines.—C. E. John and Samuel Wethered, of Baltimore, Md. Patented Sept. 21, 1853. Ante-dated, May 25, 1853.

1,599.—Manure Spreader.—James H. Stevens, East Durham, N. Y. Patented March 25, 1862.

HINTS FOR HOUSEKEEPERS.

POISONS AND ANTIDOTES.—The antidote of a poison is that which renders it instantly harmless; this it does by converting the elements or ingredients of the poison into new compounds, which are wholly innocuous. But in all these cases, the benefits to be derived from the employment of an antidote are proportioned to the instantaneousness of the application; the importance of this is very generally understood, but the event deprives friends of all presence of mind; they are thrown into such a flurry as to be incapable of connected thought or efficient action. It may, therefore, save many a human life if the reader will impress upon his mind two or three general principles. It is true that "every bane has its antidote," but as there are hundreds of poisons, and the memory would be overtaxed with an antidote for each, it is agreeable to note that some substances are perfect antidotes against a dozen poisons; and it is fortunate, too, that these substances are almost always on hand, even in the poorest households. Strong coffee; salt and mustard; white of eggs; any kind of domestic oil, lard or grease; these four things antagonize almost all ordinary poisons. If the reader will bear this in mind, he can be happily and efficiently calm, under almost any circumstance of poison in which he is likely to be placed. 1. Prevention is best. No poisonous substance should be allowed in any household for one single instant after it is out of the hand; whatever has been left after use, should at once be thrown into the sink or carried out into the street or road, broken, poured out or scattered. 2. The very moment you see any thing in a paper or bottle or other vessel, without a mark showing what it is, empty without a moment's delay into the sink; this is safer than throwing into the fire, for it may be inflammable or explosive and cause much mischief. 3. Never take, taste, or give any thing, whether powder or fluid, in the dark, or with out looking deliberately at the label, in clear light, although you may have put the vessel or paper down with your own hand, a minute before. But from inattention, recklessness, or design, poisons will sometimes be swallowed, and the wise will inform themselves beforehand as to the best means of procedure. First, send for a physician. Meanwhile, remember that the effect of administered poison is instantaneous, the patient immediately cries out with the sensation of heat or burning, or scalding at any point from the mouth to the stomach; the presumption then is, that some corrosive poison has been taken—something which eats or destroys or disorganizes the muscles or fleshy parts of the tongue, mouth, throat, stomach, &c. Most poisonous substances of this sort are acids, and the first best remedy likely to be at hand is common soap dissolved in water, or

soda or saleratus or magnesia; but in the hurry of inexpert hands the remedy may be made so strong as to become of itself another poison, hence it is best to take the simplest thing which is most likely to be at hand, and which cannot injure in any quantity or strength in which it can be taken; hence for poison which cause an instantaneous sensation of burning in the throat, &c., drink a tea-cupful of sweet oil or lard, or grease of any sort; the most that can happen from an over-amount is that it will be vomited up, and this brings more or less of the poison out of the stomach. Then you can more leisurely drink magnesia-water or strong soap-suds, or a table-spoonful of wood ashes put in half a pint of warm water, stir, let it settle two minutes, pour it off and drink. If a powder has caused the sensations, the most generally applicable antidote is to swallow one or two raw eggs; the white is the efficient part, but there may not be time to separate the yolk; this is best in poisons from arsenic, corrosive sublimate, verdigris, creosote, &c. If the effect is not instantaneous, and time may be taken, the first best thing to be done in all cases is to get the poison out of the stomach instantly, by swallowing every five minutes a tea-cupful of warm water into which has been stirred a full tea-spoon each of common salt and ground kitchen mustard; there is vomiting almost as soon as it reaches the stomach; then drink a cup or two of very strong coffee, which is the best remedy for all anodyne poisons, as opium, morphine, laudanum, &c., &c. In short, if the sufferings are instantaneous and urgent, drink sweet oil or soap-suds; if gradual or causing drowsiness, mustard emetic, strong coffee or white of eggs.—*Hall's Journal of Health.*

SORGHUM MOLASSES.—The five principal States of the West for the production of Sorghum molasses are Missouri, Iowa, Illinois, Indiana and Ohio.—Their estimated production, last year, was 10,203,728 gallons. This year only 6,970,882 gallons—a decrease of nearly three and a quarter millions of gallons. The amount of ground planted was much greater than in 1862, but the frost destroyed the yield. The annual consumption of molasses and sugar prior to the war was about 40,000,000 gallons of molasses and about 1,000,000,000 pounds of sugar, the amount per each inhabitant, slaves excluded, being 39 pounds. The increase of the consumption of sugar in the United States since 1840 was 227 per cent., whilst the increase of population was 63 per cent. The Louisiana cane sugar, this year, will not, it is supposed, exceed 30,000 to 50,000 hogsheads, and hence the country must rely on heavy importations to supply its wants.

Christopher Sargent, of St. Johnsbury, Vt. has three hens which have laid during three months 396 eggs.

